Amateur Radio

VOL. 51, No. 1 JANUARY 1983
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JOURNAL OF THE WIRELESS INSTITUTE OF AUSTRALIA

1983 WORLD COMMUNICATIONS YEAR

Farewell Function
Square-One Receiver

Nicad Charger
Phased Verticals

HF-VHF-UHF ANTENNAS

The ATN range of HF, VHF and UHF Yagi, Log Periodic and dipole Antennas are ruggedly constructed for long life. High grade tapered, swaged and seamless aluminium is used throughout. The precision made injection moulded insulators use tough Lexan.

AH HF antennas include a 2 KW PEP balun, while the VHF and UHF range are supplied complete with a 200 W PEP balun. Also they may have up to 4 driven elements which provides both high gain and good broadband performance. The UHF range use "N" type connectors on their baluns.

MODEL (Showing bandwidth and number of elements)	DESCRIPTION	GAIN (dBi)	BOOM	PRICE $
HF MONO BAND YAGI's				
27-28-3B	11 metre 3 element yagi	10.0	3.5	77.00
28-29-3B	10 metre 3 element yagi	10.0	3.5	77.00
27-30-3B	10/11 metre 3 element yagi	10.0	3.5	92.00
20-30-1	Rotary 15/11/10 dipole	2.2	—	
20-30-1IIV	C.B. Base Dipole as above. Suit horiz. or vert. polarization.			
14-14.4-1	20 metre heavy duty rotary dipole			
14-14.4-3	20 metre 3 element yagi	9.2	6.0	183.00
14-14.4-4	20 metre 4 element yagi	10.0	7.0	276.00
21-21.5-3	15 metre 3 element yagi	9.2	4.5	122.00
21-21.5-4	15 metre 4 element yagi	9.9	6.0	204.00
21-21.5-5	15 metre 5 element yagi	11.2	8.0	296.00
VHF MONO BAND YAGI's				
50-52.5-5	6 metre 5 element yagi	11.9	3.5	97.00
50-53-8	6 metre 8 element yagi	14.2	5.5	153.00
50-53-11	6 metre 11 element yagi	16.2	9.0	194.00
144-148-8	2 metre 8 element yagi	12.7	2.2	60.00
144-148-11	2 metre 11 element yagi	14.6	3.8	71.00
144-148-16	2 metre 16 element yagi	17.0	6.3	91.00
144-148-13	2 metre 13 element yagi	17.3	6.6	91.00
MODEL	**DESCRIPTION**	**GAIN (dBi)**	**BOOM (M)**	**PRICE $**
UHF MONO BAND YAGI's				
420-470-6	70 cm wideband 6 el.	10.2	0.6	46.00
420-470-14	70 cm wideband 14 el.	14.2	1.5	67.00
420-440-11	70 cm special 11 el.	15.7	1.85	71.00
420-440-15	70 cm special 15 el.	16.2	2.85	81.00
420-450-27	70 cm wideband 27 el.	16.7	3.05	101.00
432-16 LB	70 cm Narrow band 16 el.	17.2	3.7	87.00
47-5	UHFCB 5 element yagi	9.2	0.65	46.00
47-11	UHFCB 11 element yagi	17.2	1.7	67.00
47-15	UHFCB 15 element yagi	18.0	2.8	77.00
580-14	50 cm ATV repeater 14 el.	17.5	2.0	

10/30/9 (uses linearly loaded longest element for maximum efficiency O.A. 11.0 Mx) on 10m. boom available.

HF BROADBAND LOG PERIODICS				
13-30-6	13-30 MHz 6 el. Log	7.5	6.0	327.00
13-30-8	13-30 MHz 8 el. Log	9.0	8.5	409.00
20-30-6S	20-30 MHz 6 el. Shortboom	7.5	4.0	204.00
20-30-6L	20-30 MHz 6 el. Longboom	8.5	6.0	235.00
20-30-8	20-30 MHz 8 el. Log	10.2	8.5	306.00

RF POWER DIVIDERS

All power dividers are fitted with "N" connectors.

140-150-2 (Couples 2 x 50 OHm ants. to 50 OHm feeder at 140-150 MHz) $49.00.

400-470-2, 450-500-2 and 470-520-2 UHF dividers, 2 port. $46.00.

140-150-4 (Couples 4 x 50 OHm ants to 50 OHm feeder at 140-150 MHz. $62.00.

400-470-4, 450-500-4 and 470-520-4 UHF dividers, 4 port. $57.00.

FERRITE BALUNS

MODEL	RATIO	CONNECTOR	FREQUENCY	PRICE $
3-150-1:1 200W	1:1	SO 239	3-150 MHz	14.00
100-600 1:1 200W	1:1	"N"	100-600 MHz	18.00
3-150-4:1 200W	4:1	SO 239	3-150 MHz	18.00
3-100-1:1 1KW	1:1	SO 239	3-100 MHz	26.00
3-100 4:1 1KW	4:1	SO 239	3-100 MHz	29.00

QUARTER WAVE SLEEVE BALUNS

144-148-5OU 2KW	1:1	SO 239	144-148 MHz	34.00
144-148-5ON 2KW	1:1	"N"	144-148 MHz	37.00
420-470-5ON 2KW	1:1	"N"	420-470 MHz	36.00

INSULATORS

ATN Insulators are made available for those who wish to make their own antennas. They are manufactured from tough non-brittle ABS injection moulded plastic.

No. 1 for ½" or ⅝ elements on 2" boom. $5.20.

No. 2 for ⅜" on a 1" boom (large size for VHF split dipole). $1.65.

No. 3 for ⅜" on a 1" boom (small for VHF/UHF). $1.35.

No. 4 for ⅞" elements on a 2" boom with 5" positive rake. $5.20.

TV ANTENNAS

Designed for extra high gain in poor signal situation on both VHF and UHF.

COMMERCIAL ANTENNAS

A wide variety of commercial antennas can be supplied on request. For example the model 480-512-14 UHF commercial trigger link antenna.

CUSTOM BUILT ANTENNAS

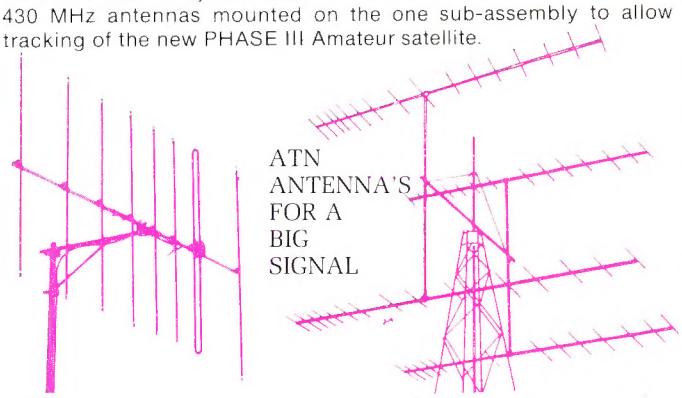
If you have an application but no antenna ATN antennas can probably help you. Contact us with your requirements.

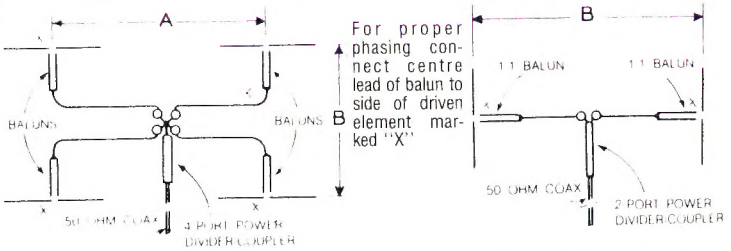
SHORTENED BOOM HF AMATEUR ANTENNAS

On special order ATN can supply a range of shortened boom HF yagi's for those with space problems.

PHASE III SATELLITE PACKAGE

This new antenna system due to be available soon has both 144 and 430 MHz antennas mounted on the one sub-assembly to allow tracking of the new PHASE III Amateur satellite.





Also available power dividers/couplers, quarter wave sleeve baluns and matching harnesses for stacks of two or more arrays; also 1:1 and 4:1 baluns in 200W or 1 kW and insulators for homebrew. Write for free catalogue.

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amateur radio

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Copy is required the **first of each month**. Acknowledgement may not be made unless specially requested. All important items should be sent by certified mail. The editor reserves the right to edit all material, including Letters to the Editor and Hamads, and reserves the right to refuse acceptance of any material, without specifying a reason.

Material should be sent direct to **P.O. Box 150, Toorak, Vic., 3142**, by the **25th of the second month preceding publication. Phone: (03) 528 5962**. Hamads should be sent direct to the same address by the **1st of the month preceding publication.**

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Victorian Consumer Affairs Act: All advertisers are advised that advertisements containing only a P.O. Box number as the address cannot be accepted without the addition of the business or residential address of the box-holder or seller of the goods.

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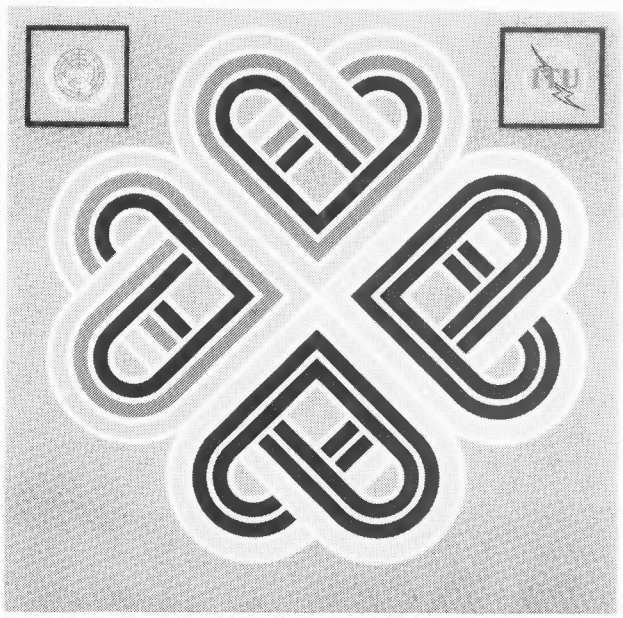

1983 has been proclaimed World Communications Year (WCY). Our cover features the official emblem and throughout 1983 we will have news and information from VK and throughout the world in reference to WCY. Turn to pages 5, 6 and 7 for our first features.

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BONUS MIC WORTH $29.95

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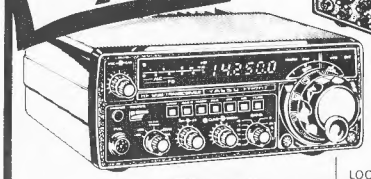


FT707

The FT707 is a full power all HF band (including WARC) multi-mode transceiver not much bigger than an average 2 metre mobile! And you get digital display as well. LED S/power meter, push button operation .... all the things the amateur needs for safe and yet reliable mobile operation. But it's more than that: team it up with a FP-707 supply and it's a superb base station, too. Cat D-2869

WAS $795

NOW ONLY $699.00

The brilliant **FT ONE**

LOOK AT THESE FEATURES:
All mode - even FM (optional extra). All band - it receives from 150kHz to 30MHz continuous, with resolution down to 10Hz and it includes all WARC bands. All microprocessor controlled. All area operation: run it from 100-120 or 200-240V AC in the shack, or 13.5V DC when mobile! All solid state (of course) and all performance - with better than 0.3uV sensitivity and more than 100W output (SSB).
Cat D-2852

Includes free mic worth $29.95

ONLY **$1995**

NEW **FT 102**

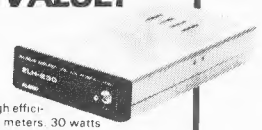
New from Yaesu & Dick Smith - the fabulous FT102. 240W all mode optional transceiver, push button controls, dual meters, digital display and much more. A superb base station transceiver with 3x61468's in the final.
Cat D-2880

BONUS MIC WORTH $29.95

ONLY $1225

SUPER COMPACT! SUPER VALUE!

30W 2M Linear Amp



This is an all mode, high efficiency Linear amp for 2 meters. 30 watts output - 13.8V DC supply make it perfect for mobile use. Dual time constant for SSB or FM. Reverse polarity protection, works well with any 2M transceiver with up to 3 watts out.
Cat D-2546

ONLY **$89.50**

The Go Anywhere **FT290R**

The brilliant Yaesu FT-290R is a portable or mobile set. Fully microprocessor controlled offering up to 10 channel memory, scanning, LCD display, high or low power operation, all modes (yes, CW SSB & FM) plus full 144 -148 MHz band coverage. All this in a transceiver which can be operated both portable (from internal batteries & whip antenna) or mobile (ext. antenna & power sockets fitted).
Cat D-2885

NEW ACCESORIES

CASE	Cat D-2910	$7.50
Flexi Ant	Cat D-2912	$9.50

MMB11-290 (Mobile Mounting Bracket) Cat D-2911 $39.50

ONLY **$349**

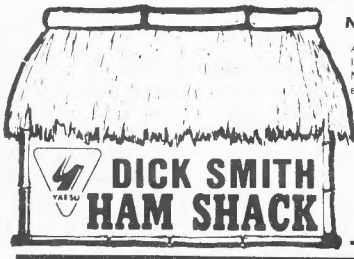
NEW NOVICE ALL MODE **TRANSCEIVER**

Model SS105 S

Fantastic for the Novice - 10W all band transceiver (100W with optional amp), operates from 12V DC so its great mobile or base. Weighs only 5kg and is a tiny 124 x178x272mm. Even goes FM with optional FM unit! And look at the low, low price.
Cat D-2900

GREAT VALUE $549

Dick Smith Ham Shacks are located in the stores listed to the right. You'll find a licenced amateur at each shack - someone who can talk your langauge and give you any help you need. (Amateur items also available at other Dick Smith stores).



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WIA NEWS

PUBLIC RELATIONS:

Mr John Hill (VK3DKK) currently the AR advertising manager has been appointed to the part time position of Public Relations co-ordinator. The appointment was made at the executive meeting held on 18th November, 1982. This follows the resolution made at the 1982 Federal Convention.

John's duties will include co-ordination of each division's current PR packages into a central point, and he will liaise directly with the divisions in the near future to establish a unified approach. A programme was drawn up by the convention, and gave suggestions as to where our efforts should be directed. A small budget was allocated and John will be working in close contact with the Executive at all times.

In due course it is hoped to establish a central 'bank' of media contacts for divisional use.

The success of this venture relies wholly on divisional input and support, and is an area which has been neglected for many years. It is hoped that the WIA involvement with a public relations arm will be an ongoing facility, however our continued efforts in this area will be subject to close review at the 1983 Federal convention.

RETIREMENT

Mr J. D. Williamson VK3JD of the Department of Communications has recently retired.

During his service with DOC, he was deeply involved in the amateur service and congratulations and best wishes for a happy retirement go with him.

AR.

INTERNATIONAL NEWS

HOW TO APPLY FOR A GERMAN SHORT-TERM AMATEUR RADIO LICENCE

Licensed foreign radio amateurs staying temporarily in the Federal Republic of Germany (on visit or in transit) may obtain a short-term amateur radio licence from the Deutsche Bundespost, valid for a period of three months, by directing their application, at least 6 weeks in advance.

German short-term amateur radio licences are issued to foreign amateurs for periods of three months only, beginning on the first day of the month as requested by the applicant. The short-term licence will entitle the foreign amateur to operate a fixed, mobile or portable amateur station on the territory of the Federal Republic of Germany according to the class of licence.

The call sign to be used will consist of the prefix DL/. . . (for class B), DH/. . . (for class A) or DC/. . . . (for class C) followed by the home calls sign of the foreign amateur. When operating mobile or portable on telegraphy, the indicators . . ./m or . . ./p should be added to the above mentioned call sign, or the words . . ./mobile or . . ./portable in the case of telephony operation. (Example: DL/VK3 ABC working from a fixed location, DL/VK3 ABC/mobile working mobile on telephony).

On issuance of the licence by the Deutsche Bundespost the holder undertakes to comply with all German amateur regulations.

Further information may be obtained from Federal Office of WIA.

VS6 ACTIVITY DAY 1983

HARTS is pleased to announce that once again there will be a VS6 activity day between 0001 UTC Sat. 2nd April 1983 and 2359 UTC Sun 3rd April 1983.

As in previous years as many VS6 stations will be active on all band/modes. 1983 is World Communications Year (WCY) and during 1983 the special call-sign VS6WCY will be in use by the HARTS club station. Special QSL cards will be issued for QSOs with VS6WCY. QSLs for WCY station should be sent to the Hong Kong QSL bureau manager, PO. Box 541, Hong Kong.

NEW CALL SIGN SERIES ALLOCATED TO AMATEUR STATIONS

According to the ITU Notifications, the following new call sign series have been allocated to amateur stations in the countries mentioned respectively since the beginning of 1982.

Bahrain	A92AA — A92ZZ
Cape Verde (Islands)	D44AA — D44ZZ
Comoros	D68AA — D68ZZ
Dominica	J73AA — J73ZZ
Gambia.	C53AA — C53ZZ
German Democratic Republic	Y20AA — Y99ZZ
Zimbabwe	Z21AA — Z29ZZ

FREQ. ALLOCATIONS FOR HONG KONG AMATEURS

10 MHz Band

As you know HARTS had made formal application for use of this band by holders of class 'A' licence as far back as November 1979. At a meeting with the telecomms authorities in April this year all seemed to be fine and the authorities were prepared to allow us the use of the band after they had cleared this with the mainland China authorities. The latest position is no different due apparently to staff changes and summer holidays within the telecomms dept. Also they are shortly filling the vacant post of head of freq allocation.

In short we are sure to get this band but due to the above administrative problems within the govt. dept. concerned it now looks that this will not happen until about 1st Jan, 1983.

50 MHz Band

In Hong Kong this is a shared band and HARTS has for some time being pressing the telecomms dept. to allocate more of it to the amateur service. We have at their request made formal application for the following segments of the band and telecomms dept have agreed in principle subject to the existing users' agreement. This should be a formality and we are hopeful of getting this allocation on 1st Jan, 1983.

UPCOMING REGION 2 CONFERENCE

IARU Region 2 Executive Committee in its meeting in Brasilia on June 19, 1982, among others approved that the next regional conference will be held in Cali, Colombia from June 6th to the 11th of 1983.

More detailed information will follow. However this secretariat wishes to inform this to our Headquarters as well as Regions 1 and 3 without further delay and thus extend the first formal invitations to our central and sister IARU organizations.

Specifically the minutes of our Brasilia meeting will also say: ". . . following an established tradition, the EC will also accept documents to be presented by IARU Hq, Region 1 EC and Region 3 Directors," So please consider sending your formal proposals as well as any information papers to this secretary if possible before March 6, 1983. Any documents originated by other IARU bodies, such as special committees, working groups or Region 1 and 3 societies, should be presented through Hq. or R/1 and 3 as may be the case.

From Pedro Seidemann, YV5BPG,
IARU Region 2 Secretary
AR

QSP

1983 WORLD COMMUNICATIONS YEAR:

"Everyone has the right . . . to seek, receive and impart information and ideas . . . through any media."

(Art. 19 of Universal Declaration of Human Rights adopted by the United Nations General Assembly on 10 December 1948)

Next only to food, shelter and energy on the list of vital needs for human survival, communications constitute the life blood of today's world and serve as a constant reminder of the oneness of human destiny.

The past half century or so has witnessed an exponential growth in the world's communications capability; yet, with the introduction of every new service, man's needs grow even faster and the spiralling demand for more and more communications facilities is a reflection of man's endless search for a better life.

The development of communications infrastructures all over the world is the primary objective of the World Communications Year. The world of today is getting smaller and smaller, thanks to the constant growth of communications networks in many countries. However, there exists an imbalance in the development of communications infrastructures in various parts of the globe. Only through the redress of this imbalance by a more even development of communications infrastructures everywhere can the peoples of the world be brought together, thus creating more stable conditions for the maintenance of international peace and security.

Better communications mean . . .
. . . better living conditions.

WCY Secretariat
International Telecommunications Union
Geneva, Switzerland

WORLD COMMUNICATIONS YEAR: development of communications infrastructures

"The General Assembly,

. . .

Recognizing the fundamental importance of communications infrastructures as an essential element in the economic and social development of all countries.

Convinced that a World Communications Year would provide the opportunity for all countries to undertake an in-depth review and analysis of their policies on communications development and stimulate the accelerated development of communications infrastructures.

1. Endorses the proposal made by the Economic and Social Council in paragraph 1 of its resolution 1981/60 and proclaims the year 1983 World Communications Year: Development of Communications Infrastructures, with the International Telecommunication Union serving as the lead agency for the Year and having responsibility for co-ordinating the inter-organizational aspects of the programmes and activities of other agencies;

2. Requests all States to participate actively in the attainment of the objectives of the World Communications Year;

. . .

Extract from United Nations General Assembly resolution 36/40 adopted on 19 November 1981"

A WORLD YEAR FOR WHAT PURPOSE?

Better communications . . .
. . . through improved infrastructures

The quality of a telephone conversation between two people depends on the quality of the circuits.
The quality of the postal service also depends on the quality of the available infrastructures.
The result of any move to improve communications infrastructures is an improvement of the communications which are essential to most human activities:

- posts and telecommunications
- broadcasting, television, press, etc.
- transport (air, sea, river, rail, road)
- industry
- trade
- agriculture
- health
- education . . .

Better communications mean . . .
. . . better living conditions.

Communications infrastructures include:
All the fixed and mobile installations — building and equipment — needed to make communications work.
For example: telephone exchanges, radio stations on ships, aircraft, satellites and manned space vessels, transmitters, antennae, cables, post offices, postal vehicles, etc.

World Communications Year 1983 emanates from the determination clearly expressed by all States to intensify the endeavours of the United Nations system to promote balanced social and economic development by speeding up the establishment of communications infrastructures.
It will be given practical expression in programmes of reflection and action at the world, regional and national levels.

AT WORLD AND REGIONAL LEVELS

A specific programme of action has been drawn up under the authority of the International Telecommunication Union, which is responsible for co-ordinating the inter-agency aspects of the programme and the activities of the other organizations in the United Nations system.
The following are participating in the programme:
United Nations (UN); Economic Commission for Europe (ECE); Economic and Social Commission for Asia and the Pacific (ESCAP); Economic Commission for Latin America (ECLA); Economic Commission for Africa (ECA); Economic Commission for Western Asia (ECWA); United Nations Industrial Development Organization (UNIDO); United Nations Development Programme (UNDP); Food and Agriculture Organization of the United Nations (FAO); United Nations Educational, Scientific and Cultural Organization (UNESCO); World Health Organization (WHO); International Bank Reconstruction and Development (IBRD); International Civil Aviation Organization (ICAO); Universal Postal Union (UPU); World Meteorological Organization (WMO); International Maritime Organization (IMO); International Telecommunication Union (ITU).

AT NATIONAL LEVEL

The programme of action for the Year is prepared in each country by a National Committee composed of representatives of all governmental and non-governmental sectors responsible for the development of communications infrastructures or using such infrastructures.
Co-ordination of the Australian Committee and further information may be obtained from:—

Mr A. Guster
First Assistant Secretary,
Corporate Policy & Projects Division,
Department of Communications,
PO Box 34,
Belconnen ACT 2616.

ANNEE MONDIALE DES COMMUNICATIONS
WORLD COMMUNICATIONS YEAR
AÑO MUNDIAL DE LAS COMUNICACIONES

1983

Official symbol of
World Communications Year 1983
representing "infrastructures"

During WCY '83 amateurs throughout the World will be participating in many different ways. Printed here are the ideas of some of our fellow amateur clubs and associations.

THE FEDERAL REPUBLIC OF GERMANY FIRST TO DONATE FOR PRIZE-WINNERS OF "YOUTH IN THE ELECTRONIC AGE"

Following a campaign launched by the Year's secretariat inviting Member countries of the ITU to donate prizes for the winners of the "Youth in the Electronic Age 83", the world-wide photo and drawing competition organized in the framework of TELECOM 83 as one of the activities of WCY 83, the first donation, of an amount of DM 3000, was made by the PTT Ministry of the Federal Republic of Germany, (Bundesministerium fur das Post-und Fernmeldewesen). All administrations, organizations, associations and individuals should consider the possibility of contributing donations, to stimulate young people around the world to participate in the contest, thus encouraging their interest in the field of telecommunication.

SEVERAL RADIO AMATEURS ENDORSE WORLD COMMUNICATIONS YEAR 83

Many radio amateur clubs have responded with enthusiasm to an appeal made by the Secretary-General of the ITU, Mr. Mili, to support the Year by publicizing it on the largest possible scale and by organizing, according to their possibilities, events relating to this major event.

Since the early days of radio, radio amateurs have contributed to the technological and scientific development of communications as an instrument of peace, friendship and technical education and have, on many occasions, proved to be of paramount importance in disaster relief operations. World Communications Year provides a unique opportunity for radio amateurs to help strengthening the efforts ITU deploys in developing the world's communications infrastructure.

ARGENTINA

The Radio Club Argentino has accepted with enthusiasm the invitation of the Secretary-General to publicize widely the activities of the Year and informed him that contact with the authorities Under-Secretary's Office for Communications would be established to join their efforts to those of others in the country.

CHILE

The Radio Club of Chile has expressed a keen interest in WCY and plans to mobilize all radio amateurs members of the Club to ensure the widest publicity and stimulating the organization of special events in recognition of the Year. In addition, the Secretary-General has been informed of the Club's fullest support and close collaboration and of the widest dissemination possible of information on WCY through its magazine and bimonthly radio broadcasts.

HONG KONG

The Hong Kong Amateur Radio Transmitting Society is considering the possibility of focusing their annual "VS6 Activity Day" to be held in April 1983 in World Communications Year.

ICELAND

The proclamation of World Communications Year 1983 has been the subject of discussion at a recent meeting of the Board of the Icelandic Radio Amateur. (Islenzkir radioamatorar). Members of the Board were very positive towards this major event and decided to unite with all other national societies of radio amateurs in the world to "make the Year a success long to be remembered".

PORTUGAL

The Portuguese Radio Amateur Association, (Associacao de Radio amadores Portugueses), has offered to collaborate fully with the PTT administration in Portugal for the activities to be undertaken in the country in support of WCY 83.

PHILIPPINES

The Philippine Radio Amateur Association demonstrated its willingness to co-ordinate its activities with those of other communications users and regulators by becoming member of the WCY National Committee recently formed in the country. The Association will not only be in a privileged position to co-operate effectively in the Year's activities planned at the national level but their participation in the Committee's work will also enable them to ensure that the concerns of radio amateurs in the Philippines will be taken into consideration, should new communications policies be adopted as a result of the in-depth review and analysis that all countries have been requested to undertake during World Communications Year.

USSR

The Radio Sport Federation of the Union of Soviet Socialist Republics considers the possibility of organizing in 1983 a certain number of events in conjunction with World Communications Year. Further information will be transmitted through the Soviet Ministry of Communications when specific activities will have been identified.

ECUADOR — EL SALVADOR — HONDURAS

The Radio Amateur Clubs of these three countries communicated their intention to support fully national activities that would be carried out during World Communications Year and assured the Co-ordinator of the Year of their full collaboration. **AR**

A Square-One Receiver

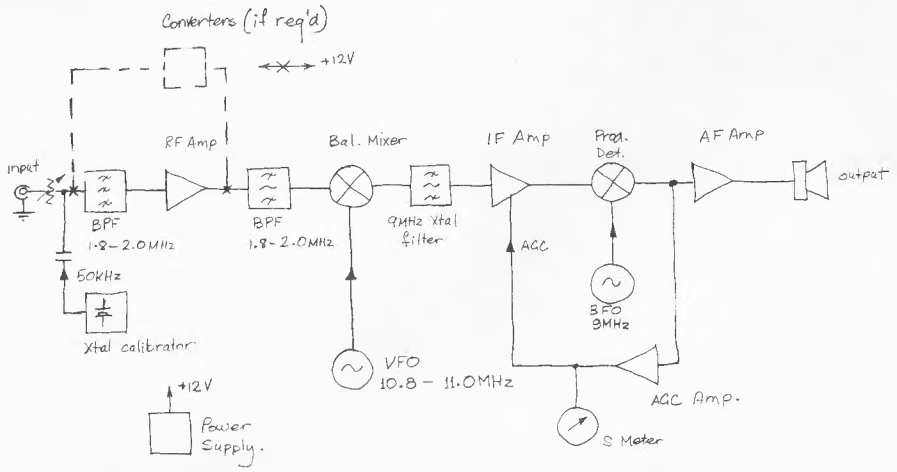
Drew Diamond, VK3XU,
43 Boyana Cres., CROYDON, 3136.

The construction of a home-made HF receiver seems a daunting task if one examines some of the designs presented in traditional literature. One glance tells the intending builder that many of the components specified will be difficult to obtain, and that elaborate test equipment will be necessary to get the thing going properly. However, if the project is started with a relatively simple receiver, which tunes a low-frequency band, say 1.8 to 2.0 MHz, converters may be added later to cover other frequency bands of interest. References (1) and (2) at the end of this article have details of some suitable converters. It is also hoped that circuit details for converters may be published at a later date — depending upon response.

Those who expect cunning phase-locked loops and digital displays will be disappointed, as this receiver was empirically designed drawing on circuit ideas from many sources with cost, performance, reproducibility and parts availability in mind. All components are readily available in Melbourne at present. To keep costs down, and to minimise the production of spurii, an analogue dial is used. To preserve frequency resolution, a tuning range of 200 kHz is provided. Any greater coverage would cause a loss or resolution and necessitate the inclusion of a ganged capacitor or peaking control for the RF amplifier.

PERFORMANCE SPECIFICATION

The prototype has the following characteristics:
BASIC FREQUENCY RANGE: 1.8 to 2.0 MHz.
RECEPTION MODES: CW, SSB USB/LSB and AM (as SSB).
SENSITIVITY: 0.3 microvolts (-117dBm) for 10dB S + N : N.
MINIMUM DISCERNABLE SIGNAL: 0.1 microvolts (-127dBm).
DYNAMIC RANGE: 80dB for third-order intermod. products.

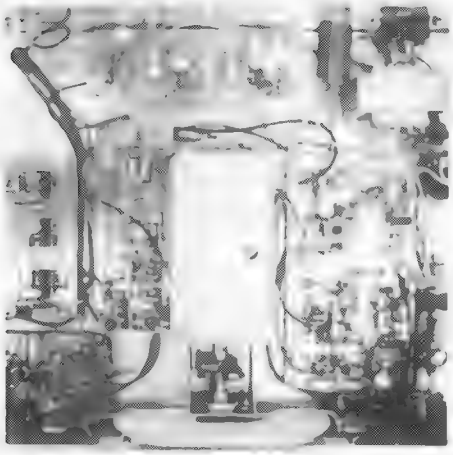


Block Diagram

FREQUENCY STABILITY: Less than 100Hz in any one hour period after warm-up.
IF BANDWIDTH: 3kHz.
Image Rejection (2 x IF): Greater than 100dB.
IF REJECTION: 80dB.

BLOCK DIAGRAM DESCRIPTION

Input signals in the range of 1.8 to 2.0 MHz are routed to the RF amplifier via a gain control and an input band-pass filter (BPF). The filter is necessary to prevent overloading of the RF amplifier by strong out of band signals such as those from BC stations. After negotiating another BPF, the signal is applied to a balanced mixer where a local oscillator signal of 10.8 to 11.0 MHz is applied. For an input signal frequency of 1.8 MHz, the oscillator would have to supply 10.8 MHz to place the signal at the intended IF of 9 MHz, ie, 10.8 - 1.8 = 9. A crystal filter (made from four 27 MHz, 3rd overtone CB crystals used on their 9 MHz fundamental series mode) yields a -6dB point selectivity of 3 kHz. A tuned IF amplifier increases the signal by about 50 dB. The product detector converts the 9MHz SSB or CW signal to audio by mixing it with about 9 MHz from the BFO (another 27 MHz crystal operated on its fundamental).



Underside view.

At this point, the detected audio signal is divided into two paths; one via an audio amplifier to drive speaker or headphones, the other via an AGC amplifier to derive an AGC voltage and drive the S-meter. As the IF amplifier comprises the greatest gain block, a voltage is applied to this stage to affect AGC action. This is necessary to protect the operators ears and to allow reception of signals which vary considerably in level without the need to continuously fiddle with gain controls.

When converters are added to allow reception of higher frequency bands, a wafer switch is employed to switch out the input BPF and RF amplifier as indicated in the block diagram. A 5 MHz crystal oscillator is divided by 100 to provide 50 kHz calibration markers. Part Two will have a full circuit description, and Part Three will have construction details and board layouts.

References: 1. Solid State Design — ARRL. 2. ARRL Handbook — 1980. 3 ARRL Handbook — 1982. 4. Radio Communication Handbook — RSGB 5. "Modern Receiver Mixers for High Dynamic Range" — QST, Jan. '81
Photos — Peter Dalliston.

VH

If you keep putting one word in front of the other you will become a rag chewer

* * *

While waiting for a DX station to come back to us in an instant is a breath-taking division of time.

ARNS Bulletin Sept 1982

FAREWELL DINNER FUNCTION PETER DODD VK3CIF

A farewell dinner was held at the Celebrant Restaurant on the 15th of November in honour of Peter Dodd, VK3CIF, retiring as Office Manager of the WIA.

It was good to see that fifty friends of Peter gathered and nostalgia was highlighted from pre-dinner beverages to late, late after dinner time speeches.

Presentations were made on behalf of the divisions and speeches were delivered by the Federal President Peter Wolfenden VK3KAU, the President of the VK3 Division Allan Noble, VK3BBM, and Dave Williamson VK3JD of DOC on behalf of the VK6 Division.

Other speakers showing their appreciation for Peter's work were Michael Owen VK3KI and Dr David Wardlaw VK3ADW.

Peter, in his own inimitable way, went through the "History of Amateur Radio and the WIA".

It was an evening which will be remembered by all present, and in particular, by Peter Dodd VK3CIF.

L to R: Peter VK3KAU, Federal President, his XYL Cynthia, Peter VK3CIF and David VK3ADW.

Peter responds to a presentation by David VK3ADW.

John J. A. Hill VK3DKK.

AH.

As the sunspot cycle declines activity will once again move to the lower bands. For DX operation a vertical antenna and in particular a directive vertical array would be a great advantage for operation on the lower HF bands. Hy Gain have produced a paper on phased vertical antenna arrays. This paper is entitled Amateur Phasing Engineering Report. Ref. 1. In the paper a number of vertical antenna configurations are shown. The vertical antennas used are their widely known trap verticals and their less widely known 18HT HY Tower.

Phased Vertical Antenna Arrays

Gil Sones VK3AUI
30 Moore Street, Box Hill South

BROADSIDE ARRAY

When two vertical antennas are fed in phase with equal amplitudes of RF as shown in Fig. 1, the array will exhibit a broadside bi-directional pattern. The pattern is as shown in Fig. 2 for a spacing of half a wavelength. The pattern is held with some degradation of the null from a spacing of three-eighths of a wavelength to five-eighths of a wavelength. (See Ref. 2, page 294.) This sort of array exhibits a modest gain with excellent nulls at the sides of the bid-directional pattern.

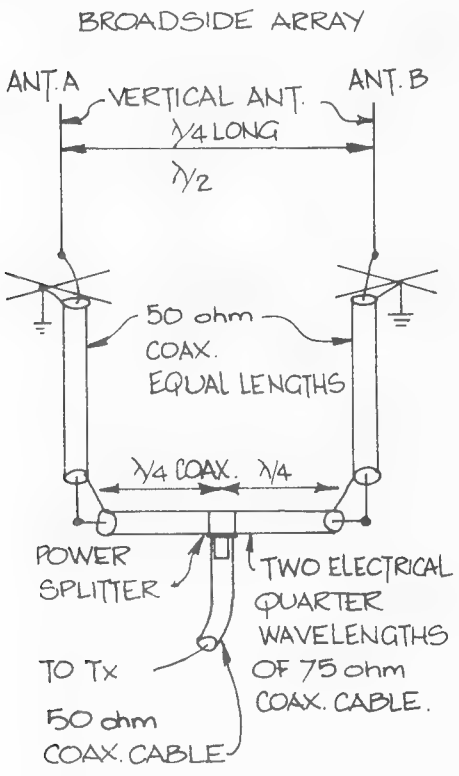


FIG. 1

POWER SPLITTER

The power splitter shown in Fig. 1 is the one used by Hy-Gain and consist of two quarter wave transformers of 75 ohm coaxial cable. These are used to transform the 50 ohm coaxial cable impedance from each antenna to 100 ohms. The two 100 ohm impedances in parallel to give 50 ohms to match the coaxial cable to the transmitter.

There are other ways of doing this and in the ARRL Antenna Anthology a somewhat more elegant system is described using Wilkinson Power Dividers. (Ref. 3, pp. 119-122.)

Another possibility for multi-band use would be one of the broadband power dividers using ferrite toroidal transformers. Indeed a system similar to the Hy-Gain system could be built using an RF matching transformer such as those manufactured by Palomar Engineers in California. Such a splitter would have the advantages of being frequency independent and of being much smaller than a roll of coaxial cable.

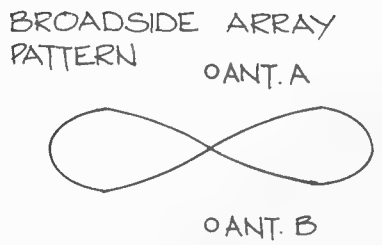


FIG. 2

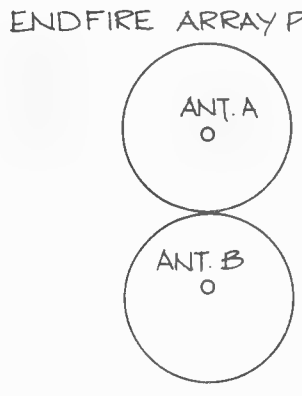


FIG. 3

END FIRE ARRAY

When the two verticals are fed with equal amplitude RF but where the phase difference between the RF fed to each antenna is 180 degrees then an end fire bi-directional pattern will result. See Fig. 3. This may be achieved by feeding one antenna with a coaxial cable which is an electrical half wavelength longer than the coaxial cable to the other antenna. See Fig. 4. The extra half wavelength of coaxial cable provides the phase shift of 180 degrees.

The end fire bi-directional antenna pattern holds for antenna spacings from one-eighth wavelength to five-eighth wavelength.

The array yields a modest gain, together with excellent side nulls due to the bi-directional pattern.

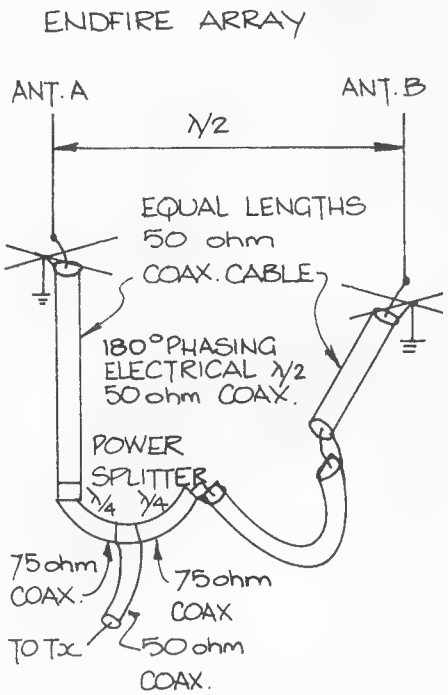


FIG. 4

180 DEGREE PHASING

The technique of using quarter wave transformers for power splitting has been used once again, together with a 180 degree phase shift obtained from a half wavelength of coxial cable.

A broadband power splitter and the required 180 degrees phasing could be obtained using wideband toroidal transformers. Such power splitters and transformers are used in many transistor amplifiers and are also widely used for antenna matching. An antenna balun could provide both the power splitting and the required phase shift, since it provides two outputs which are balanced with respect to earth and have a phase difference of 180 degrees. A balun matching 50 ohms unbalanced to 100 ohms balanced would be quite suitable. Such baluns are manufactured by Palomar Engineers and others.

The advantage of broadband power splitters and 180 degrees phasing is that they are frequency independent and smaller than the rolls of coaxial cable which would otherwise be required.

Also, if a multiband antenna is used for each element in the array, band changing would not involve the selection of a whole new set of power dividers and phasing lines. This would greatly simplify the switching involved in implementing a multiband array.

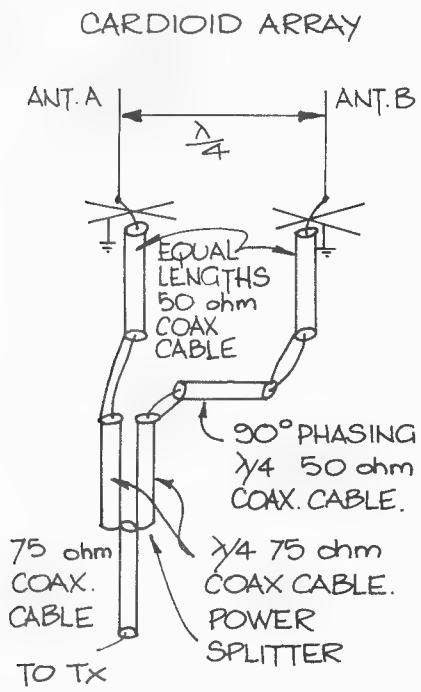


FIG. 5: Cardioid Array

CARDIOID ARRAY

Two verticals which are fed with equal amplitudes of RF but with a phase difference of 90 degrees will produce a cardioid pattern. The minimum of the pattern will be in the direction of the vertcial fed with a 90 degree lagging phase. The null is deep and modest forward gain may be obtained. The gain is greater than for the bi-directional cases. The array is shown in Fig. 5 and the directional pattern is shown in Fig. 6. The pattern starts to break up at three-eighths wave spacing and in the opposite direction it is only a flattened circle at one-eighth wave spacing. (Ref. 2, p. 294.)

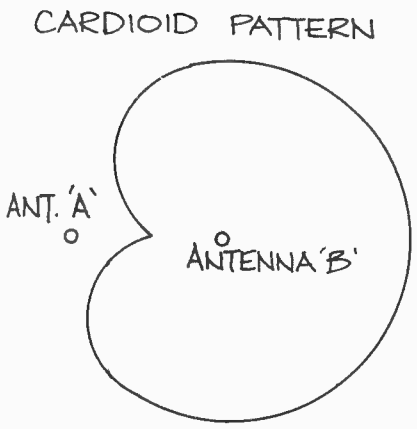


FIG. 6: Cardioid Pattern

The direction of the beam may be reversed by switching the elements so that the 90 degree delayed RF is fed to Antenna A and the zero degree RF is fed to Antenna B.

Also for antenna spacings less than a quarter wavelength the cardioid pattern may be obtained by using different phasing. For instance, for an antenna spacing of one-eighth wavelength the phase difference required is 135 degrees or three-eighths of a wavelength in coaxial cable. You must of course allow for the velocity factor of the coaxial cable.

OPERATION ON SEVERAL BANDS

By suitable choice of the spacing between vertical antennas a useful range of antenna patterns may be obtained on several bands. This may be arranged using a range of coaxial cable power splitters and phasing lines. With some experimentation a broadband system is feasible. The use of multiband vertical antenna elements such as the trap verticals made by Hy-Gain and others, or a stub switched vertical such as the Hy-Gain 18HT will allow the same vertical elements to be used on all bands required without band switching the antenna elements. Other suitable verticals would be any of the wide band verticals such as the broadband bi-conical aerial. Ref. 4, pp. 252, 253.)

GROUND SYSTEM

All the vertical aerial systems described are critically dependent on the characteristics of the ground system used. With an elevated vertical the familiar four radials of the ground plane will suffice for an antenna well clear of the surroundings. However on the lower bands this condition is not met. The earth system must provide a low resistance in the vicinity of the antenna. To this end, radial systems of 120 radials are often employed. However, this may not be practical. Reduced numbers of radials may be employed but with corresponding reductions in efficiency. The reduction in efficiency will be noticed, both as reduced gain and an upward tilt of the pattern.

In general a large number of earth radials should be employed. Also it should be borne in mind that each vertical in a phased array will require its own system. The layout of a phased array earth system for a commercial application is shown in Ref. 5, p. 20-17. Amateur systems may be seen in the ARRL Antenna Anthology, pages 22-31, where the ground systems used for single verticals are shown. The general effect of the number of radials on performance is shown in Fig. 7.

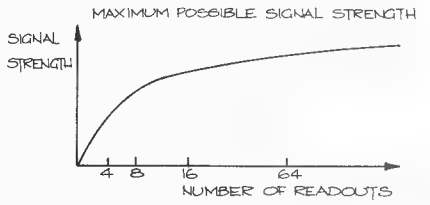


FIG. 7

Performance over a long distance path will be significantly improved by improving the earth radial system.

INSTALLATION

Such an array and indeed even a single vertical should be mounted well clear of surrounding objects which will absorb or modify the RF radiation.

The RF switching should employ coaxial switches or relays and should be built with short leads and symmetry. This is necessary to minimise losses and stray couplings which could severely compromise performance.

GAIN

Gain is a very touchy subject as it is so dependent on the actual installation. Suffice to say that with respect to a single vertical using the same ground system gains in the region of from 2 to 4 dB should be possible for verticals spaced one-half wavelength and around 4.5 dB for the cardioid using quarter wavelength spaced verticals.

These gain figures are a guide only:—

The side nulls, or the rear null for the cardioid, should be in the region of 20 to 30 dB when compared to the mean response.

When considering the gain figures it should be borne in mind that variations of several dB in the received signal over the same path with the same transmitter output power are possible by changing from a poor to a good earth system. As Bill Orr W6SAI said in the Antenna Handbook, "If you have the room to install a good radial system, a vertical phased array is a very effective antenna for the lower frequency bands'. (Ref. 6, p. 112.)

TYPICAL MULTIBAND SYSTEM

The multiband system shown in Fig. 8 is of an installation using two Hy-Gain 18HT verticals to provide Broadside and Endfire patterns on 80 metres and 40 metres and also two cardioid patterns on 80 metres.

BROADSIDE AND ENDFIRE RADIATION PATTERNS

A series of radiation patterns for broadside and endfire arrays are shown in Fig. 9, which appears in the Hy-Gain publication.

OTHER ARRAYS

A very interesting array is described in the ARRL Antenna Anthology, pages 119 to 122, for those who have the real estate.

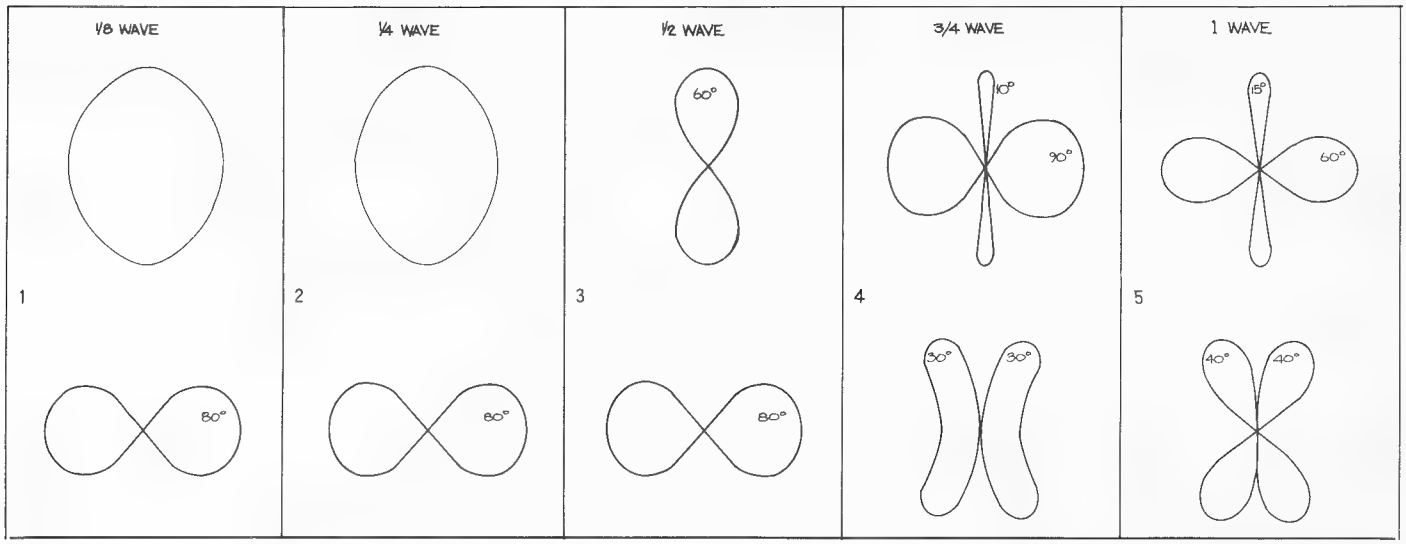


FIG. 9

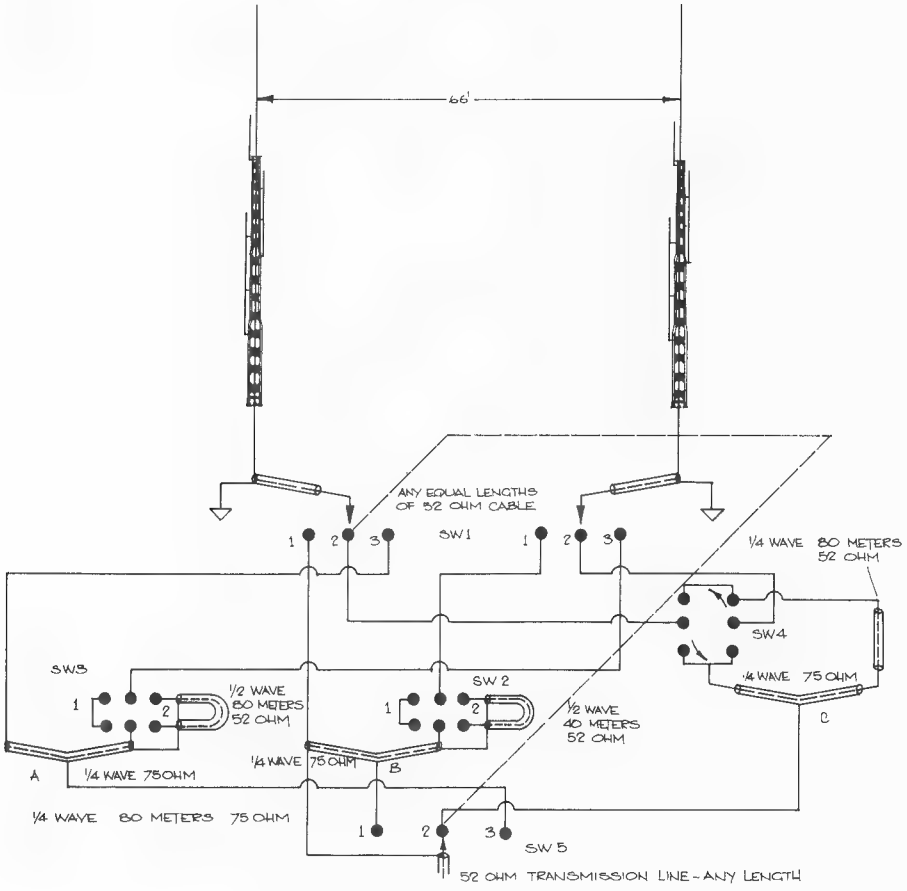


FIG. 8

COSTS

None of these antenna arrays is cheap. Multiband verticals are reasonably expensive. The quantities of coaxial cable and coaxial switches involved will set you back a tidy sum. So before embarking on such a project it would be wise to carefully consider the total cost.

REFERENCES

1. Hy Gain Engineering Report, Amateur Phasing, PN801774.
2. Antennas, by John D. Kraus, McGraw-Hill Book Company, New York, 1950.
3. The ARRL Antenna Anthology, edited by Marion S. Anderson WB1FSB, The American Radio Relay League Inc., 1978.
4. Amateur Radio Techniques, Sixth Edition 1978, Pat Hawker G3VA, Radio Society of Great Britain.
5. Antenna Engineering Handbook, Henry Jasik, McGraw-Hill Book Company, New York, 1961.
6. The Radio Amateur Antenna Handbook, William Orr W6SA1 and Stuart Cowan W2LX, Radio Publications Inc., Wilton Ct., 1978.

■

SERVICE BULLETIN

YAESU FRG-7700SW MODIFICATION

The Yaesu FRG-7700SW is sold as a shortwave communication receiver — it does not have the 150 kHz to 2 MHz band available like the FRG-7700.

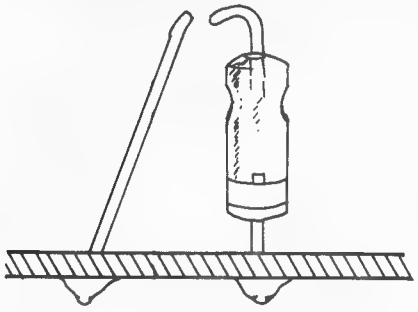
If you require the 150 kHz to 2 MHz band, this is easily fitted. The components required are already on the printed circuit board — it is just a matter of connecting them.

STEP 1: Remove the screws holding on the top cover (including the screws holding the handle on).

STEP 2: Remove the top cover.

STEP 3: With the receiver front panel towards you, locate the diodes D09, D10, D11 and D12, on the left side of the printed circuit board, slightly towards the top. These diodes are labelled on the board.

STEP 4: You will note each of these diodes is open. Solder the two ends of the diode leads together to re-connect them. (See illustration below.)



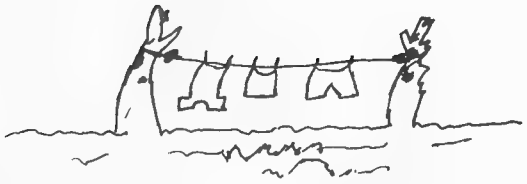
STEP 5: Test receiver: check that it now operates on all bands including the 150 kHz to 2 MHz band. If not, check your soldering.

STEP 6: Re-assemble receiver case.

This information is kindly supplied by Dick Smith Electronics, Technical Bulletin No. 75, and is available from all stores. ■

Who Says You Don't Have The Room To Put Up a Long Antenna? Of Course You Do!

BY RICHARD E. JAMES, JR., W4DQU
Reprinted from CQ Magazine Dec '81



I seldom get on 80 or 40 metres without someone telling me he is using a dipole or inverted Vee antenna because he does not have room for a long-wire-type antenna. I believe part of the problem is in the terminology. Most amateurs think of a long-wire antenna as a single, end-fed, long wire. This is not one of the antennas I have in mind, because it has to be extremely long to achieve much gain, and it is unidirectional.

The antennas I have in mind are Vee-beams and rhombics. Both of these antennas are bidirectional as long as you do not use terminating resistors in them to make them unidirectional. Both of these antennas are also all-band antennas. The antennas in fig. 1 will work 160 metres and up and neither requires a lot longer than that required for an 80 metre dipole. A balanced antenna should be at least approximately one-half wavelength on the lowest frequency band for efficient operation on that band.

In these two antennas, for a given length in feet, the higher you go in frequency, the more gain you get. Of course, there is an optimum angle for each band for each length, but any given antenna will be usable on all bands and will give some gain on each band as long as the apex angle is between 32 degrees and 90 degrees. A short Vee-beam or rhombic will be closer to optimum on the higher bands if the angle is small and closer to optimum on the lower bands if the apex angle is large. A chart of gain and optimum apex angles is shown in Table I.

I have put up many of these antennas, using available trees in most cases. I do not worry too much about the apex angle. The antenna is still a usable antenna and a much better performer than a dipole or inverted Vee.

Yes, these antennas require the use of a tuner and open wire line, but you get some advantages:

1. All band operation.
2. Low feed line loss.
3. Due to higher impedance at the antenna feed point, on most bands, the RF voltage is higher and the amperage lower. This allows the use of light, inexpensive antenna wire and feed lines. I use 18 gauge steel core antenna wire 18 gauge (spaced one inch) 450 ohms open wire feed line, and usually a short piece of insulated open wire line as lead-in between window and windowsill.
4. An extremely good ground system is not needed as in the case with a vertical antenna.
5. The antenna is cheap.
6. The antenna is so light that it can be pulled up to tree-top height with a nylon string thrown over a tree limb.
7. Two antennas can work the world, especially if one is oriented northeast and southwest and the other northwest and southeast.
8. Separate antennas for high and low bands are not needed.

In summing up, it is hard to understand why two such antennas have largely been overlooked.

The Vee-beam is almost as easy to put up as a dipole. The rhombic is a little more trouble because it requires four supports and all four in about the right places. However, the rhombic does have slightly more gain for a given amount of wire and sometimes it is the more desirable on a narrow lot because the apex angle will be twice as large as on a Vee-beam erected on the same lot.

Try one of these antennas. You will like it. Remember, the longer it is, the more gain you get. But even if the antenna is short, it will do better than a dipole or an inverted Vee installed on the same length lot because it will have twice as much wire in it, more gain, and more space diversity.

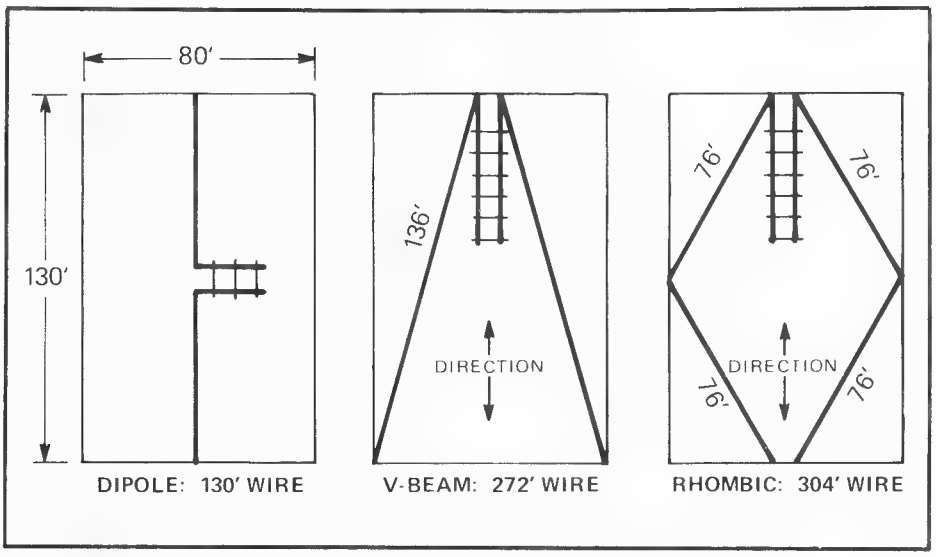


Fig. 1 - Wire antennas placed on a typical small city lot. Of course, dimensions will vary.

Leg Length in Wavelengths	Gain	Optimum Apex Angle
1	3.0 dB	90°
2	4.5 dB	70°
3	5.5 dB	57°
4	6.5 dB	47°
5	7.5 dB	43°
6	8.5 dB	37°
7	9.3 dB	34°
8	10.0 dB	32°

Table I - A chart of gain and optimum apex angles.

Getting to know you

Tom Delandre VK2PDT
102 Buffalo Road, Ryde 2112, NSW

Well after almost two years in the amateur ranks and having retired August last, I feel it is time to put back into the fraternity some effort in appreciation of the many enjoyable hours both on and off the air.

First off I would like to express my appreciation for the efforts of Ron VK2DAE, Greg VK2DHI, Don VK2NUQ and Dick VK2DZX. It was due to the excellent lectures of Ron and the encouragement and assistance of these and many others that I managed to pass the novice exam. Hopefully I wish to update next February, rather slow progress compared to that to be expected if I had been able to continue with Ron's lectures.

Not long after I retired in July 1981, my XYL and I took a casual caravan tour of the Central West and the Riverina. The first night was spent at Lithgow, after a late start with last minute modifications needed to the wiring of the caravan and the little Mazda diesel utility. Next morning it was no trouble to get an early start as it was so cold. However, a little fan type radiator took care of that problem from then on.

While on route to Parkes we were able to do a favour for VK2EEE by picking up some electronic bits and pieces at Orange to be collected from VK2NNF at Parkes. On the way I was in touch with all the gang on the Koodkaburra net and given a precise talk in to Walter's QTH at Parkes, with the pot of tea ready just as we arrived.

After a most pleasant few days there, we set off for Hillston to visit Wilf VK2BAW. As rain had set in we kept to the tar road and had no problem with navigation as Wilf and Col VK2EEE were in touch for the majority of the day.

At one stage, after lunch, Col assured me that if I cared to tarry at a little creek up ahead I would be able to get some good Yellow Belly (Gallop) as they came out on the bank to graze on the lush grass — he was so convincing the XYL was almost taken hook line and sinker.

What a welcome at Wilga Farm by Wilf and Elsie, who treated us like royalty. I could not do justice to Wilf's build-up on the fishing but at least we caught a small one for Margaret to try. After almost a week in Hillston we headed for Griffith, intending to stay only overnight, but we enjoyed it so much at the Tourist Caravan Park we spent fours days there.

Bill VK2BBI heard me mobile in Griffith and popped in to see us and gave us a warm welcome to Griffith, as did Joyce VK2DIX. At this time of the year, August to September, Griffith proved an ideal spot to stop over for excursions to Kelly Country and many lovely spots on the Riverina.

On the way to Wagga we looked in at the Inland Fishery Research Station at Narrandera — don't miss this if you are in the area. At Wagga we had planned to look up Rex VK2YA but were informed by Bob VK2NOC that he was in hospital. So we visited Rex in hospital and he was, as usual, busy, even in the hospital he was coaching a young chap for the novice exam. By the way, congratulations, Rex, on the new XYL, look forward to meeting you both on the next trip. Bob and Betty (also an amateur, VK2NSH) gave us a warm welcome, but we were sorry we didn't have a chance to call back (next time, Bob and Betty).

From Wagga the next stop was Burrenjack Dam, but my fishing efforts were in vain, once more. The XYL is sure I bought all fish from previous Bucks' party fishing trips. I had intended to pop into Tumut on the way back to visit Jack VK2DUL, Keith VK2DLZ and Bill VK2DPZ, who I had met on a previous trip to Tumut, but we were behind schedule and we had to be in Canberra to see our six-year-old grandson play football.

Thanks to all I have mentioned here and the many others in the amateur ranks for your company on the road and at home for the pleasure of your company.

Along the way I have seen many novel, interesting and effective ideas and in future articles in AR I will pass some on to you. There must be an enormous untapped wealth of ideas amongst you, how about passing them on and we will share them with the rest of the happy band. This is a big country and AR is an ideal medium to share your skills in so many spheres of radio.

73. VK2PDT. ■

Do you know what "Bonito" is?

In amateur radio communication the computer has taken its place. BONITO is a new line for RTTY/ASCII/CW/FAX/SSTV and for amateur radio communication. For this the computer is the main element. For people out of this milius a short introduction:—

The computer has received a new secondary machine, the transceiver. The normal BASIC has been modified. For RTTY the BONITO is already on the German market. A personal computer in a low price class can be used by a novice with little computer knowledge and can run a RTTY QSO. The better knowledge of basic comes automatically and you can use BONITO-BASIC without any trouble. You use 9 keys for different functions:—

1. Transmit/receive switch.
2. Split-screen for the control of rx/tx also during receive write text ready for transmission or to sink ships.
3. Baud 45-50-75-100.
4. Line length 40-60 - 75-80 characters
5. Reverse or normal.
6. Bu switch.
7. Give out standard text — text is laid in DATA lines.
8. Shift 850-450-170 Hz.
9. Test picture for specialists.

Up to here everything is normal, the main thing is the BONITO-BASIC. The principle of this basic is that it can be used on all computer systems. The new amateur radio basic has the following orders:—

1. PRINT* — transmission of all in this order of given variables.
2. DEF* — then with DEF* called up variables given a string of the last 11 received characters and in receive constantly changes its contents.
3. GET* — get a RTTY character if none is received the variable — CHR$(0).
4. WAIT* — wait for RTTY character until it has been read.
5. WAIT*ON — wait for an up to 11 character long RTTY string.
6. WAIT*FRE — wait until system is ready for reception.
7. END* — forces a switch over to receive by a mistake routine.
8. ON* — switch to transmit with automatic switch over to receive with order 9.
9. INPUT* — read in the RTTY characters into a variable up to carriage return or the 255 character.
10. CLR* — clear RTTY buffer of old characters.
11. GO* — help routine for jumps into system with hex.
12. INT* — switch on interrupt so as when going out of the programme you can transmit or receive in direct modus.
13. CMD* — splint-screen on/off.
14. RESTORE* — put DATA pointer behind the standard text.
15. RESTORE*ON — with a compatible variable look for text block and put DATA pointer on to text block.

These orders make it possible for an OM to write a BASIC programme without having to worry about the RTTY technique. It is now possible to use new ideas by people with BASIC knowledge, i.e. automatic call acknowledgement, calling up club infos. Rotor control also for automatically following satellites, etc. These are all possibilities that can be solved in basic. You can build it up to a fully automatic club station. There is no end to the possibilties that are now open to the amateur radio operator.

The group BONITO is working on the next version of ASCII and CW and are keeping to the same standard as in RTTY. Note that the RTTY BONITO already has a CW transmission, part of which can be used. It is used in the RTTY chip as CW-ID or RTTY-ID. The ASCII version will receive 8 bits, which makes it possible to exchange programmes or transmit pictures. The SSTV version will be made up to work together with the 8 bit ASCII. SSTV will take a little longer than expected but will be kept as simple as possible. For those interested it will be a completely new concept; it will be a FAX graphic where only the picture points change; you can also get a print-out. For those interested. BONITO is not a club but a group of people looking for new ways in amateur radio communication, who use every new idea and try to make something out of it. BONITO is a loose group of people that help each other as best they can. Anybody can be a member of BONITO, he just has to join and you do not have to come from Germany We accept help from any part of the world.

For information write to:—

Peter Walter, 3100 Celle an der Ziegelei 1, Germany.

The RTTY-BONITO can only be used on CBM systems for the moment. ■

TRY THIS with the Technical Editors

Phase Shift Frequency Multiplier

A form of requency multiplier which uses phase shifted signals was described in Designers Casebook in Electronics for Jan. 13, 1982, by Fred Brown of Lake San Marcos, California.

The frequency multiplier operates by splitting the input signal into a number of equally spaced phases. The number of phases is equal to the desired multiplication factor. A doubler would use two phases 180 degrees apart and a tripler three phases spaced 120 degrees and a quadrupler would use four phases spaced 90 degrees, and so on.

The advantages claimed for this method are the high degree of suppression of harmonics other than the desired harmonic and the ability to build wideband multipliers by using wideband phase shift networks.

For amateur use an interesting approach would be to use coaxial cables as the phase shift network which would be fairly easy to set up.

A skeleton explanatory circuit of a quadrupler is shown in Fig. 1.

A more advanced quadrupler from 7.5 MHz to 30 MHz is shown in Fig. 2. This circuit is reported to have 50 dB suppression of the second and third harmonics below the desired fourth harmonic.

The 90 degree and 270 degree phases are obtained by using a simple LCR network (Fig. 3). The capacitive and inductive reactances are made equal and R is used to control the amplitude. The phase being controlled by trimming C and L. The inductance L is made up of the inductance of the primary of T1 in Fig. 2.

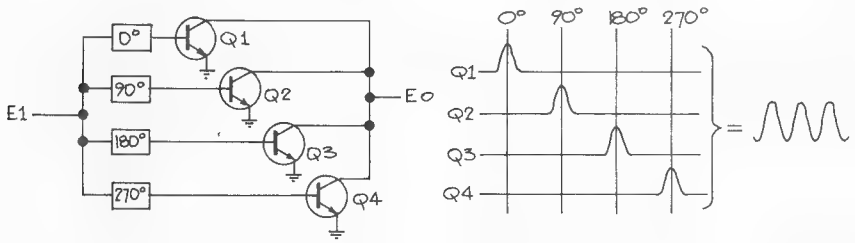


FIG. 1

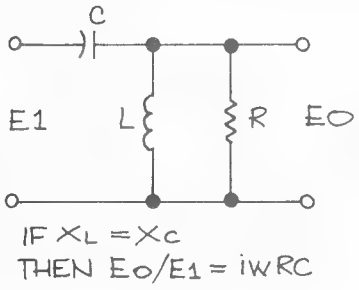


FIG.3

The output network is used to match the output load to Q1, Q2, Q3, and Q4 and to provide some suppression of higher harmonics. The lower subharmonics being suppressed by the operation of the multipliers. ■

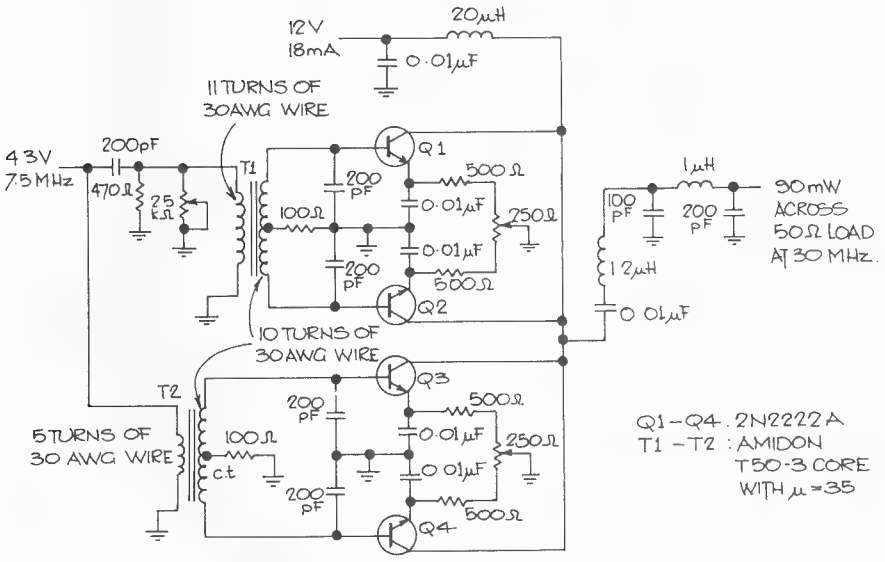


FIG. 2: Quadrupler. This high-frequency multiplier quadruples 7.5 megahertz to 30 MHz. The LCR network illustrated in Fig. 3 is used with T1 and T2 to provide a 0°, 90°, 180° and 270° phase shift for the four transistors. The second and third harmonics are suppressed more than 50 decibels below the desired 30 MHz level.

My Ruler

I have a ruler, an ordinary 15 in. long ruler, which I guard jealously. I don't know where I got it from now, it's chipped, faded and a bit hard to read, but it's just about irreplaceable.

"Throw it away," you may say, "this is the metric age, you don't need inches any more!" And even if I do, I have other inch rulers, carefully hoarded or bought overseas, so what's so special about this one? Because it's a "decimal" inch rule, that is, the inches are divided into tenths, not quarters, eights and sixteenths like the others. And that's important because IC pins are 0.1 inch spacing, and as long as the US retains the inch measurement (and they show no signs of going metric yet) we in electronics had better hang on to our inch rulers, and blow the Metric Conversion Board for not doing their homework properly. Just try to design a PC board layout with half a dozen ICs using a metric ruler and you'll see what I mean.

Ken VK2DOI in the Propagator June 1982.

A Nicad Charger

By Terry Long VK3EC
In The Radio Bulletin May 8 (EMDRC)

Recent trends by manufacturers have produced a selection of hand-held transceivers which are becoming popular. These are mainly powered by nicad cells, and the charging of these have given many people grey hairs. The following article is my approach to this problem.

Nicads are, for the most part, expensive in outlay so the way to obtain value for one's money is to make sure they live as long and are recycled as many times as possible. In order to achieve this we have two "golden rules": (1) NEVER discharge them to the point where any cell goes reverse polarity, and (2) DO NOT overcharge them; despite what some say, they do "gas".

The following circuit will allow you to control the maximum voltage; other "refinements" are current and discharge controls. Firstly, the circuit in Fig. 1 consists of a clock (74C00/2), a voltage comparator (741), a timing switch (74C74/2), a gate and buffer (74C00/2) and switching transistors. Assuming the battery is low and start on a charge, when the clock goes low the charge is cut off, the 741 looks at the voltage applied to pin 2, compares it with voltage applied to pin 3 via the potentiometer and presents high/low to pin 12, 74C74, to decide if the next pulse will charge or miss. Beautiful in its simplicity!

Having decided to hit/miss, the next trick is, by how much? This can be controlled by using the 2N 3055 in a current limit, control provided by the 100 ohm W/W pot — take care when adjusting, it is possible to drive all the current through the 2N3638A and blow it! These transistors are not critical — the ones mentioned are the ones I used but many others will do just as well. As you will see, the layout is designed to get the energy into the battery with as little as possible going to waste. By using a 22 K dropping resistor to the 5.6V Zener, consumption for the whole logic is less than 1 mA, not really required for your average battery charger!!

The next refinement is aimed at maintaining a high capacity in the battery. The feeling is that this is achieved by discharging the battery to a safe level and then recharging — nicads are considered discharged at 1.1V but if you're mean, then allow 1.0V/cell. The circuit in Fig. 2 allows me the option via the push button switch to discharge the battery down to 1V where the relay drops out and the contacts cut the load and re-establish the pulse charge. As you see, there is a red LED which lights to denote discharging, a green LED which lights to denote charging, and when they are both out the unit should be fully charged.

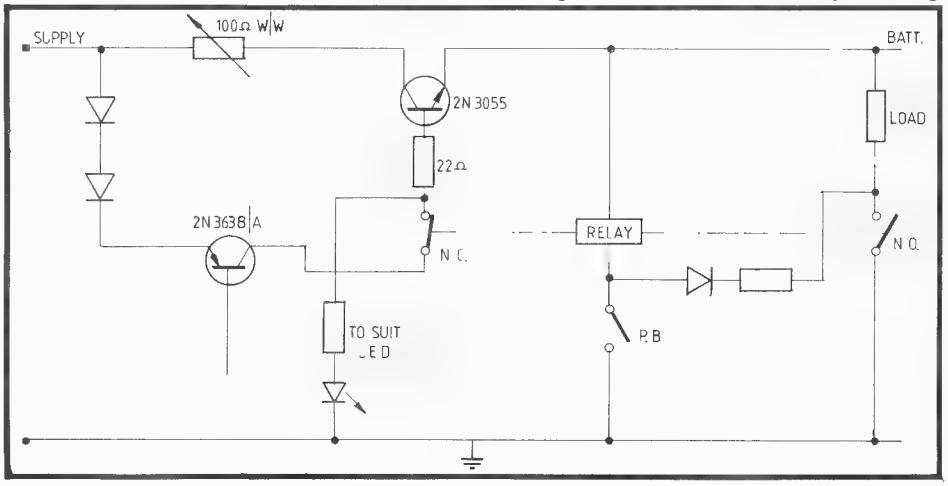


FIG. 2

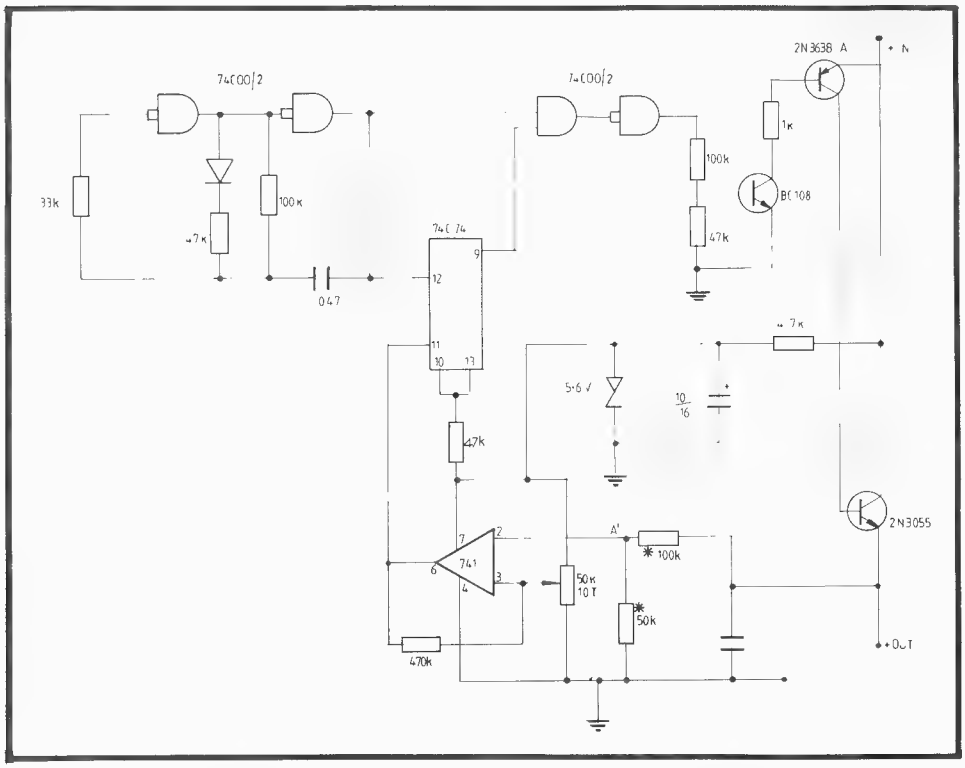


FIG. 1

In the case of the 208R all this can be achieved without any alteration to the transceiver itself as the unit has 2.5 mm plug for charging, a separate plug for external power and contacts for direct battery access. If you wish to use the unit whilst it is charging, then use the external plug direct to the output of a LM317 voltage regulator.

By using a multi-position switch, e.g. 11-12 position single pole, the unit can charge any number of cells from 2-12 in, say, battery packs. The resistors can be a wide range of values but must be within, say, 100 ohm of one another. Even this is not critical, you just pick a handful of resistors and get the dozen or so which are the closest. Two of these must go in place of *50 K, i.e. between earth and

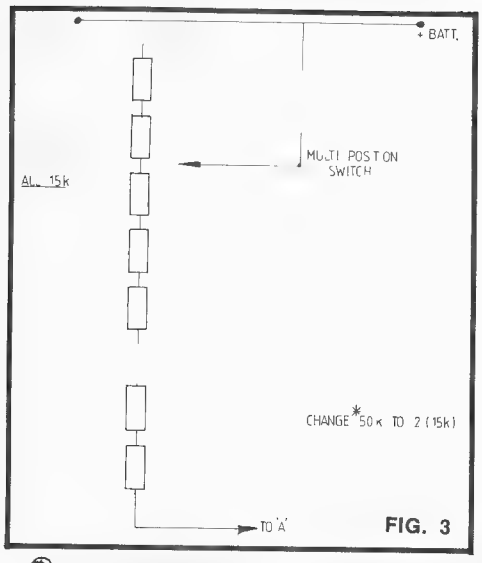
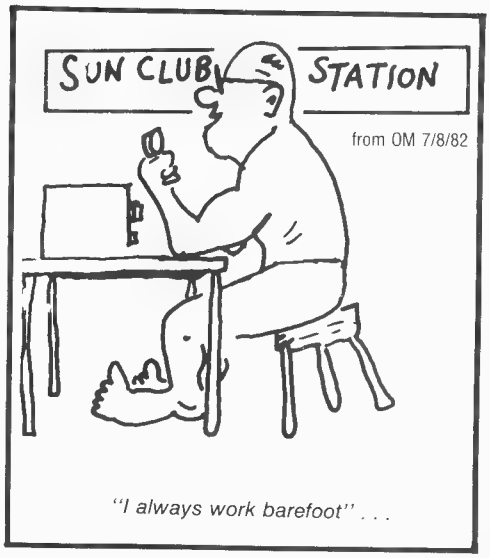


FIG. 3

"A", the rest of the string in place of *100 K but on the switch, the first resistor wired to "A"; the wiper to battery + and the other end of the string left open.

A word of caution — adjust the 100 ohm WW carefully; too high a value will send all the current through the 3638A and blow it. The 3055 is, of course, capable of passing many amps, so if you require only a couple of hundred milliamps, then just use the 3638A and make the base resistor 10 K ohm. I have used this type of circuit to charge much larger cells than nicads. It can be "tailored" to suit many applications and I'd be happy to discuss "reasonable" requirements! All care — no responsibility! Good luck! ■



"I always work barefoot" . . .

Bill Blitheringtwit in Trouble again

Ted Holmes VK3DEH
20 Edmond Street, Parkdale 3195

BILL HAS A GO AT A WHIP

After a crude sort of repair to his severed coax (necessary because he had slammed his car door on it) Bill Blitheringtwit was now setting up his mobile 2 metre rig in his car. He was in his back yard, complete with SWR meter and rather tatty looking patch cords. The two dents in his car's bonnet, caused by his size 9 boots, had been rapidly knocked out with a ball pane hammer. Unfortunately, the metal work showed the results of his pounding in the shape of some odd dome like protrusions, But Bill wasn't worried. After all, it was only a car, and a Holden at that!

For an antenna, Bill had decided upon a piece of straight coat hanger. This was good stuff. One end of it was jammed into the female half of a PL259 and several ounces of solder poured around it. The wire was about 2 ft. long or so — probably too long, but some could be chopped off to alter the SWR reading.

The SWR meter itself was ancient. Marconi would have recognised it, no doubt. The state of the device hadn't been at all improved by the fact that Bill had dropped it a couple of times and had also trodden on it. The fractured bakelite casing had been repaired here and there with masking tape.

He hooked everything up and dropped a carrier. The SWR needle shot straight across the dial and thumped against the stop. Obviously the antenna was too long. Out came the clippers and off came about two inches. He keyed again but the same thing happened. Still too long. Off came another couple of inches. This happened several times and he chopped away until the coathanger was only about 9 inches long. Lopped off fragments of coathanger lay scattered around everywhere.

Bill was mystified. It did not deter him at all that he had been dropping carriers all over the input of the local repeater and that the habituees thereof were at that moment expressing their displeasure. He decided to investigate and found that he had a dead short, in that the centre pin of his antenna was going to ground, due to excessive use of solder. Better get rid of some of it, but a heavy duty iron was needed.

He applied his massive plumber's iron (tried and trusted) to the pin area and within a very short space of time had totally melted all the solder, together with the plastic dialectric in the plug, which now looked decidedly droopy and unhappy.

Hot solder dripped to the ground and, rather painfully, Bill found out that it was not a good idea to wear thongs whilst using a soldering iron.

BILL GOES MOBILE

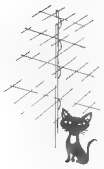
Having safely installed his ancient mobile rig in his car, Bill Blitheringtwit was feeling mildly proud that, after several attempts, he had at last got an antenna to function. No real credit was due to him, however, as his own home-brew efforts had been nothing but consistent failures. He had been obliged to purchase a ready made steel quarter whip and this aspect went somewhat against his grain. After all, Amateur Radio was supposed to be about "do it yourself" and (in connection with the antenna) he hadn't done it himself. He had been driven to buying a factory made, workable antenna and this side of things wasn't really to his liking. Nevertheless, at least he had some sort of a system up and running. Now for the acid test: to see how the thing worked under driving conditions.

Unfortunately, the day he chose was rainy. Heavy showers swept across from the south-west, but Bill was not deterred. After all, Amateur Radio was also about not being deterred. He climbed into the Holden, started up and moved safely out of ris driveway. After a few miles along wet and miserable streets he was aware of something cold trickling down his neck. A quick glance told him that the hole he had made in the roof of the car for the coax should have been properly sealed. A steady stream of water was coming through and heading in the direction of his shirt collar.

He cursed and carried on driving. He switched on the rig. A steady whining noise came from the speaker, engendered by the windscreen wipers. It was a powerful sound, almost soporific, and below all this he could just hear the sound of somebody speaking. This must be the local repeater. He might as well have a go at it whilst he was about it.

Bill waited until the voice stopped and then grabbed for the microphone. It fell off its hook on to the floor and he found himself kicking it about so as to get at it and to lure it somewhere he could pick it up again. Eventually he managed to tread on it heavily with his size 9 boots. The sound of crunching plastic could be clearly heard. They didn't make things the way they used to: some of his old mikes could be trodden on by a regiment and survive — not this modern trash! Using the curly cord, he began to pull and, like someone bringing in a fish, hauled up the microphone's dangling viscera.

At this point he decided to pull over and stop in order to see what he could do to rectify matters. The rain hadn't stopped and Bill simply didn't see the overhanging tree branch, near where he had pulled over, which neatly and efficiently decapitated his brand new quarter wave whip, leaving only the base mount as a relic of the antenna's brief existence.



Another Antenna Story

Rita G3NOB
in "Jimmy", Jan. 1982

The antenna at this QTH is a trap dipole, and we had been keeping an eye on the tree in the next door garden which was being very loving and kept on growing towards one of the end masts. Whenever the wind was in the right direction, it would wrap itself round the mast and the end of the wire.

During the last gales, and, naturally around 2 o'clock in the morning, there was an almighty crack and bang went the poor old end mast, and one end of the trap dipole was laid on the ground. Being the middle of the night and pitch black and a howling gale, there was nothing to do but hope until daylight. Fortunately, the wind did lessen.

The next day we lowered the centre of the antenna having decided we might as well put in some new centre sections of wire, the existing ones being patched up with new bits twisted in and spliced into the stranded wire in use.

To lower the centre of the antenna we undid the halyard which has to be open ended in order to wrap it around the coax feeder and the mast to prevent the coax slapping about and making an awful racket in any wind.

We lowered the antenna very carefully so that it didn't get caught on the guttering of the house, and it was almost down to the ground when there was a flurry of wind and — yes, you've guessed — away went one end of the halyard.

A ghastly silence prevailed for a split second and then Tom, my OM G3HPJ, said, "Now look what you've made me do!" Then the awful realisation dawned that we would have to lower the central mast, all 35 feet of it. This entails undoing 'U' bolts which are threaded through two spaced angle iron supports bolted to the corner of the house. Then the old climbing rope is tied around the top part of the mast, and a turn taken round the upper angle iron, and then the mast is guided in towards the house so that it rests in a corner formed by the house and the angle irons. The free end of rope is then taken round an ancient apple tree half-way down the back garden.

This is where Shorty, that's me, has to stand at the foot of the mast, arms above my head as far as they will reach, and Tom takes the free end of rope to guide the mast down shouting to me to PUSH! PUSH! PUSH! I start PUSHING! All 5' 3" and 8½ stones of me, and believe me, it's jolly hard to get 35 feet of metal masting over centre before you can guide it to ground.

We finally manage it and Tom lowers it safely within the confines of the garden without smashing up the neighbour's fencing.

Got to get a move on for the days are short. It is November, and the wind is rising again, and it's cold.

Measure out new centre sections using soft drawn copper wire this time so its not too bad to handle. Wish we had got the new traps we have talked about, but never mind these will have to do for we cannot be without an antenna.

We attach wire to traps and the balun and then check outer sections and see that one end of the stranded wire is holding by about three strands, but as the light is getting poor, our hands are cold and the wind is worse, we decide to chance it.

First thing is to re-erect the centre mast. This is done by Tom lifting the top of the mast and 'walking' it upright while I try to guide it with the rope, and correct the horrible sway that develops just before it becomes upright again.

All safely clamped to angle irons again and we haul up the centre section of the antenna. Then one end and last of all the weakened end which, of course, breaks!

Decide we can manage to replace end sections without lowering the centre again, so we lower both ends only and replace with nice new wire. Quite dark now and we are both perishing cold.

Have a quick cuppa and decide we'd better do some checks. The antenna is smashing on 80, 40, and 20 metres, but won't take more than 40 watts on 15 metres without the SWR going astronomical. So we decide the traps are US and the next morning telephone KW and order new traps, telling the man who answers the 'phone we think we have a dud one, and he asks how long have we had them in use? We say about 12 years, and he says, "Oh, well, they'll be out of guarantee!!" They aren't KW anyway, they are IOW.

The new traps arrive in a few days time, but in the meantime I work 20 metres, and one morning as Tom had to be away earlier than usual, I saw him off the premises and thought I'd take a listen on 20, and there was ZL1AXM (whom we know as G2KK) just signing off at the end of a QSO. So I gave him a call with my 80 watts and there he was answering me! The band was changing, but we managed the bare bones of a QSO assuring each other that families were OK. There must be something in this business of "an ill wind"!

At the weekend we got to work to lower the antenna to put in the new traps. We lowered the centre of the antenna carefully, but the knot in the halyard slips — and — away she goes again to the top of the mast. So back to the mast lowering exercise — it's a shocking habit to get into you know.

Eventually we get the mast back up, the new traps fitted and the antenna raised. Now comes the big deal when we check the antenna from the rig again. We get exactly the same results. OK on 80, 40, and 20 but still only 40 watts on 15, without the very high SWR.

Ah ha, we say. It must be the balun. Oh well, we'll use the nice shiny Hygain that we are keeping for the beam whenever we can sneak one up without the neighbours noticing.

Lower the antenna once more — YES, YES, YES folks — away goes the halyard. Privately, I think that maybe one of those Snow Snakes that have invaded Long Clawson has strayed to Loughborough, eaten the halyard and taken its place.

Poor Tom cannot face managing with only me to push - pull twice in one day, so we have a brainwave and keeping our fingers crossed that he is at home, telephone a friend who lives a few yards down the road, Jack G3BKF, whom some of you may know for he is a cw only operator and works quite a number of VK/ZL stations.

Great! Jack is at home bottling wine, so he comes over and lends a hand. It makes everything so much easier, and the mast comes down and goes back up again like a dream.

Everything must be OK this time for even the coax feeder is new, having been replaced a few weeks earlier.

Inside to check that all is now well, and we just cannot believe it, for we get exactly the same results again!

So we go over everything we have done. New feeder, new wire, new traps, new balun, so what is it?

Suddenly, remember we have made up a shorter length of coax to connect the SWR Bridge to the ATU, so put back the old longer length and check again. EVERYTHING IS FINE ON ALL BANDS.

So we put the short length back and try again, and we are back to square one, fine on 80, 40 and 20 but not 15 metres.

So we are still with the longer length of connecting coax and are still in the dark as to why the short length is no good. It measures 77 cms and was checked so that there is no short and it works all right into a dummy load, but not into the antenna. The longer length is about 1½ metres. Any suggestions?

So, friends, remember, there is always an easy solution to every problem — neat, plausible and wrong. ■

HELP WITH INTRUDER WATCHING

THUMBNAIL SKETCHES

Leighton Gibson, ex 4AN.

Leighton started building receivers in the 1920s with circuits from "Hertzian Waves" and his father brought a Marconi crystal set back from Canada, which would receive VIB and so to learning morse code, then in 1921 a "smuggled" "Anaka" valve six volt one amp. Next he used the inevitable spark coil to make a nuisance of himself and nearly lost his licence (it was untuned), but using a receiving valve got him out of trouble.

At that time, being a semi-invalid, enabled Leighton to spend much time experimenting and operating and he became very well known. For a time Leighton was Technical Editor of Queensland Radio News and also wrote under the pen name "Bananalander".

He joined Philips in 1928 and served with them in various parts of Australia and overseas until his retirement in 1967.

Leighton and Andy Couper 4BW were the sole means of communications between North Queensland and Brisbane after the 1927 cyclone which brought forward a letter of praise from the Deputy Director of Posts and Telegraphs, Mr. A J Christie. This event is well written up in "Radio" 30 March 1927.

NORMAN ODGERS. 4BO 1924, VK4NK/VK9NK 1937, VK6NF 1951, VK4CH.

Like so many of this period, Norm, of year 1906, started about 18 years of age and received a lot of assistance from his father in Charters Towers. Bob Odgers gave the call sign initials and an assurance had to be given by Bob for issuance of a licence to Norm.

Included in Norm's equipment was an Atwater Kent spark coil and a helix supported zinc plates condenser. Power was derived from a water driven car generator, permanent magnets and charging batteries.

Norm completed a Marconi course with AWA in 1925, Sydney, and went to sea in 1926, moving through many ships in his sea career.

He came ashore in 1936 to Coastal Radio, Port Moresby and remained in control there at times as Navy, through the war years until 1951.

Norm encompassed the Coast Watching System in his responsibilities. From 1951 to 1971 he was manager of International transmitter and receiver stations in WA, also having close association with NASA for whom he holds certificates of commendation.

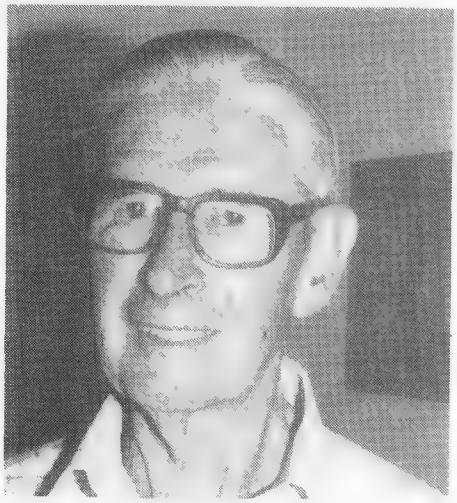
Norm is quite active on the HF bands and would vie with Hal VK4DO as the longest licensed active amateur in VK.

W C "BILL" ROHDE. 4RW. 1929.

"Bill", a Brisbaneite of 1906, was a schoolboy "wireless" addict. He joined the Wooloowin Radio Club in 1920 and the YMCA Radio Club in 1922. "Bill" was mostly a low power, 7 MHz, CW operator but occasionally played gramophone music over the air.

1924 saw him as a trainee mechanic with the PMG graduating to a telephone mechanic in 1928, to radio 4QG 1930, then to long line communications for some years to return to radio as Divisional Engineer for Queensland, Papua New Guinea, in 1953. In 1961 he was promoted to Supervising Engineer assuming departmental control of broadcasting, television and radio operations in Queensland. "Bill" retired in 1972.

"Bill" is very interested in historical matters, being closely associated with a Telecom display, and appreciates the vast changes that have taken place during his career to the extent that he recently gave his "Recollections of 50 years in Radio and Electronics" to a meeting of the Queensland Division, a talk which was very well received.



from "Caballeros Del Aire" Translated by Luis VK3ZLD.

COMMERCIAL KINKS

WIDE OR NARROW CW SWITCHING WITH THE TS-520S

It's always pleasing to get feedback on modifications published in Commercial Kinks. The wide / narrow CW switching for the TS-520 has proved useful to many amateurs but it seems that the modification is not directly transferable to the TS-520S. If you have tried without success here is the answer by Evan Jarman, VK3ANI . . .

I was interested in the TS-520 modification in the June 1979 issue of AR and attempted to change a TS-520S believing the circuitry to be identical.

The modified unit did not work as expected, casting suspicion on the procedure. However, a difference in circuitry came to light after talking with Andrew VK3BHC and some additional changes were found necessary.

The problem is in the carrier oscillator switching.

There are two frequencies used for CW operation: One on receive (CWR = 3.3943 MHz), the other on transmit (CWT = 3.3950 MHz). These frequencies are obtained by diode switching using the Rx/Tx relay. In the TS-520, the tune position retains this rationale, but the TS-520S does not; CWT is used on both Rx and Tx. This modification restores the function switch rationale to that of the TS-520 to enable use of VK5TT's alteration.

S-3 is the mode switch and section 1 activates the CWT frequency. There are two wires connected to the tune position; one black, the other red. The black wire is removed. This wire removal requires some care as it bridges two fairly inaccessible switch lugs. The red wire is disconnected at the switch and reconnected to the 9 volt terminal (marked 9) on the RF generator board. The wire now connects the 9 volt terminals of the RF and AF boards together.

A bridge connection is now soldered between the CW and tune lugs of the switch section.

Section 2 of S-3 activates the CWR frequency. On this section a bridging connection is soldered between the tune and CW lugs.

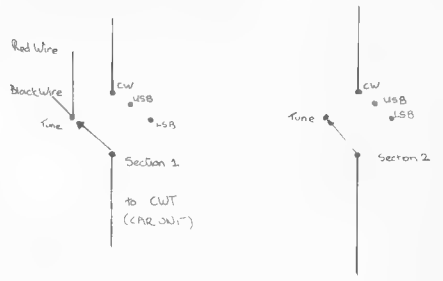
Sections 1 and 2 are located on the wafer closest to the front panel with section 1 being concealed.

Section 8, which selects the filter, is in the same position as with the TS-520S as in the TS-520 and can now be modified as per VK5TT's instructions. There is one slight difference still to be mentioned: the JJY/WWV has become the TS-520S's RF attenuator.

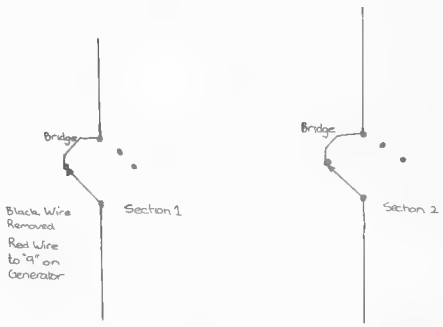
The modifications can be made "in situ" by removing the S meter but you have to be very careful.

The number of additional modifications required surprised me for what, I thought, were basically identical units. I am now quite wary of modifications for the TS-520 being used on the TS-520S, and vice versa.

Schematic diagram of modified switch S-3 on Kenwood TS-520S.



Switch S3 before Modification.



Switch S3 after Modification.

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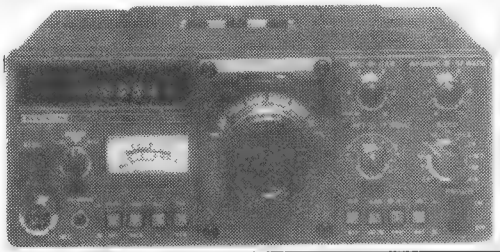

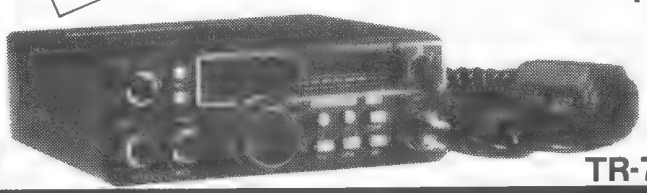

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TRY THIS

. . . The Folded Mobile Whip

John Telfer VK2BTQ

169 Mitchell Parade, Mollymook NSW 2539

If you have an interest in a different type of VHF whip antenna which has proved its worth to me . . . what about trying this. I have been using, experimentally, for some 6 months or so, a mobile antenna made from fencing wire, which caused some stares but worked so well that I decided to set down the details for others to try out.

My old 50'', 5/8th whip kept fouling the garage roof, but not so the folded whip, which is some 8'' shorter. A good feature to start with! I find also, that the new whip has a performance edge over the 5/8th. Another bonus is its operation without the need of a ground plane some interesting possibilities. What about hanging it on the picture rail, or making one, using TV ribbon which could be suspended anywhere, or even rolled up and put in your pocket.

The sketches are self-explanatory. The two paralled wires may be anything you think suitable . . . stiff, or flexible. I finally used two thin stainless steel commercial whips which I bonded together at the top. For separators I used the black insulators from 'dog-bone' TV ribbon. An old 'Pental' pen served as a coil former.

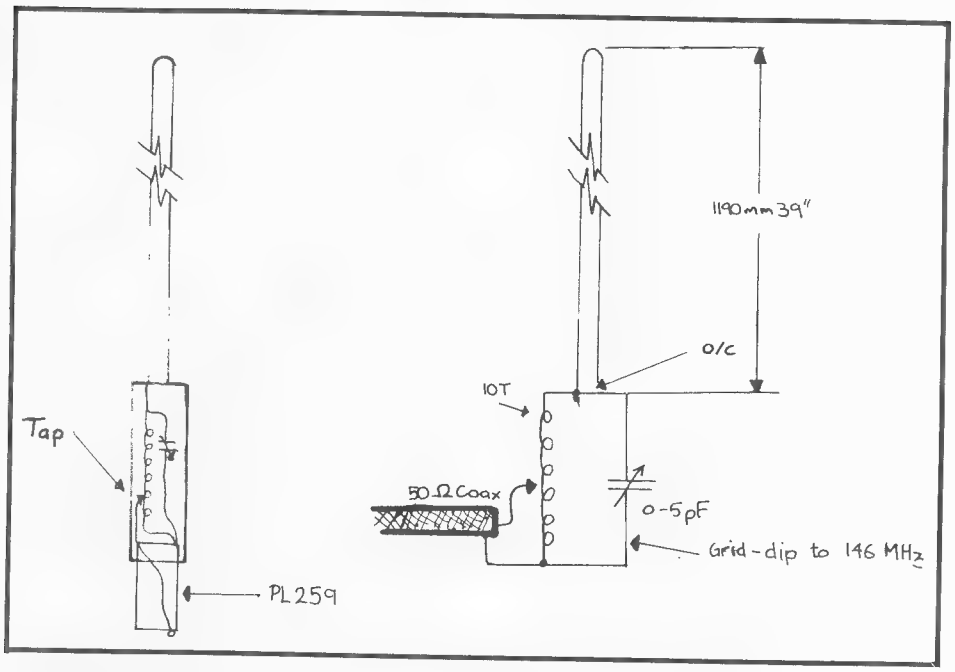
Wind the coil as shown and shunt it with a small variable capacitor . . . say, 0 to 5pF. Grid-dip the coil and capacitor circuit to the middle of the range you wish to operate, . . . in my case 146.5MHz. Do the grid-dipping **before** connecting the antenna whip. The 50-ohm co-ax matching may be varied by adjusting the position of the tap . . . about 3 turns.

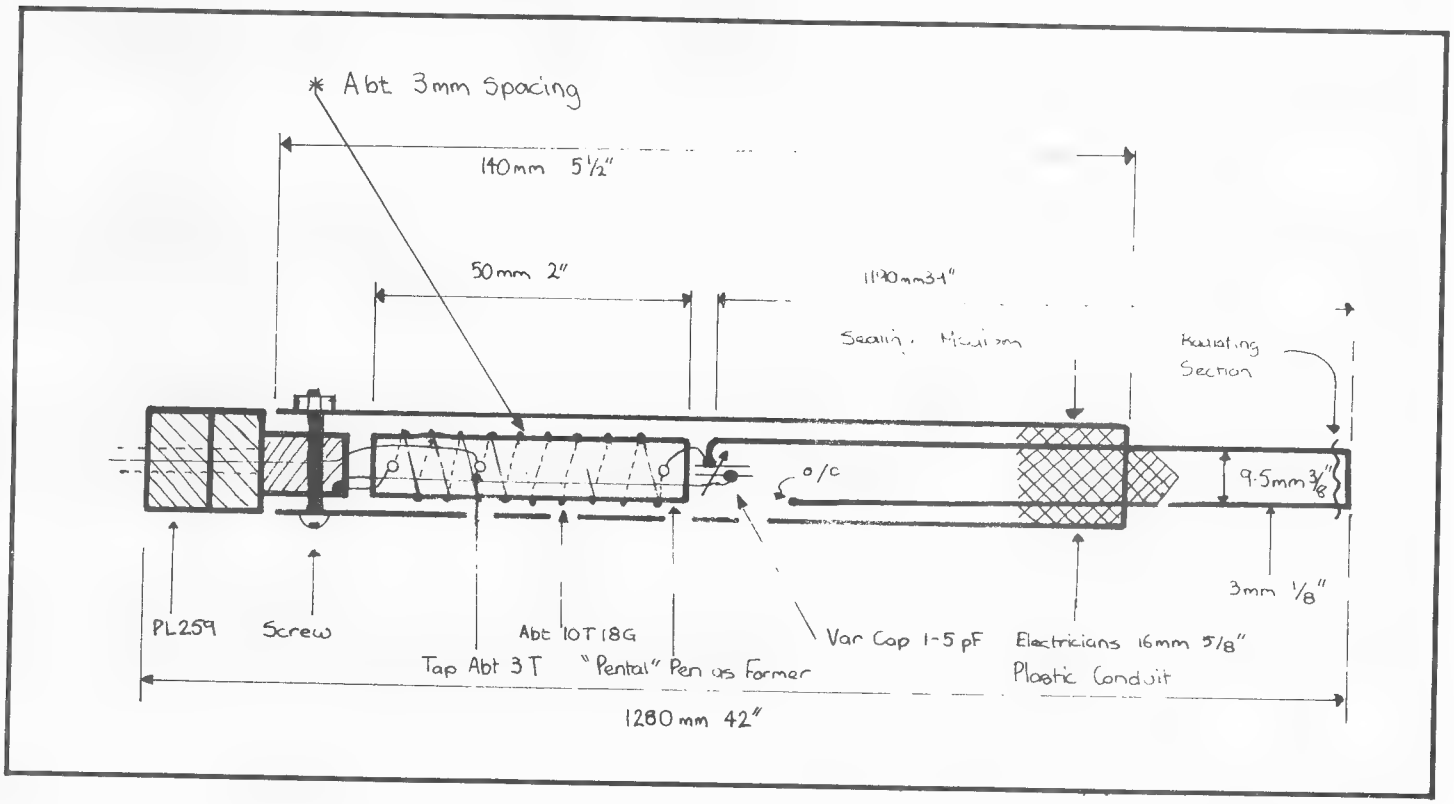
Push the tuned circuit into the plastic conduit, and carefully drill a hole for final screwdriver adjustment of the capacitor. Afterwards I filled the hole with plasticine (easy to dig out again). The top end of the conduit sleeve where the antenna exists, was sealed with some hard-setting epoxy.

Have fun!

73 . . . John VK2BTQ

AR





HOW'S DX

Ken McLachlan VK3AH
Box 39 Mooroolbark Vic, 3138.

The start of the year 1983, World Communications Year, is now with us. One hasn't got to be prophetically inclined to be able to discuss with authority that ten metres will not be as good as it was last year, more licenses will be issued throughout the world and a number of DXpeditions will be undertaken.

One cannot say with certainty whether such occurrences as the appearance of BY stations on SSB, how many countries will be deleted from the DXCC list, will one or maybe two be added, and the activation of some of the rarer DX countries will cause a major shuffle in the DX achievement ladder.

We, as individual amateurs, can do little except enjoy the privileges, that have been granted to us over the years, by abiding with the regulations governing our hobby and remembering that you are an ambassador for the country that you prefix your call with.

Collectively, through being a member of your society, such as the Wireless Institute of Australia, you are part of the voice that negotiates on items that effect the future of your hobby on both a national and world basis.

This is only one of the numerous advantages that one receives with membership of ones society. Make one resolution for WCY 83 now, that being, that you will join a new member this year.

POSTBOX BARE

The amateurs who incessantly make statements on air regarding spending all that money on stamps and IRC's in an effort to obtain cards that don't eventuate, either lethargically approach a problem when someone creates a positive approach to a solution or have not read of the offer as outlined in this column last November with reference to passing on any criticism of who were "good" or "bad" QSLers.

At the time of writing there were two letters of nominations to pass on to Jan and Jay, K6HHD and W6GO publishers of a QSL Manager and route directory. One letter was from Fred VK1MM, the other from myself. Not a very positive approach ladies and gentlemen seeing that the offer was discussed so much on at least two bands, namely fifteen and twenty metres.

Fred has given his permission for printing any or all of his submission and for the sake of brevity excerpts only have been selected.

"The best QSL'er award would have to go to WA3HUP, Mary Ann. She is about the only manager in the game who consistently and promptly sends cards back. Moreover, the only delay she seems to encounter is getting the info from the station she manages, not due to 'missing mail bags' and the like. I think the longest time I have had to wait to get a card from her is about three weeks from the date I posted mine. I just wish all the managers were like her."

Fred's nomination for the worst QSL'ers are copious but as Fred writes: *"The worst QSL'er would have to be YI1BGD. I've been trying to get a card direct for two years now. I've sent them to his PO Box, with mint stamps, with IRC's, and with green and brown stamps. I even went to the extent of finding out his home address to send cards there, but to no avail. I'd say that the gentleman concerned is making a nice little business out of it for himself!"*

Personal comments endorse Fred's remarks regarding the best QSLer though I have to differ regarding YI1BGD, a card is in my possession, yet a lot of amateurs, particularly from North America are working the station again and asking how do they achieve the honour of a card.

Fred's summary of *"What it boils down to, is that too many of these people are in it to make a quid. Some of them reply to direct QSL cards by sending them back through the bureau. Some of them send the reply back via surface mail (when enough money has been sent for an airmail reply — and to leave them some change). And the worst don't even bother to reply. Of course, there are the others that demand large sums and/or excessive amounts of IRC's before they will send you a card, but at least they are being blatently honest in their business attitude."*

Thank you Fred, and your nominations will be passed on to Jan and Jay together with my own. Perhaps now that someone has broken the ice more VK's will be forthcoming with "nominations" or at least a resume of written experiences that may save some newcomers to our membership a lot of "hassles" in getting cards which according to media speculation will become more of a financial burden in 1983.

COMMENT?

It would be appreciated if written comments regarding the value of the Heard and Worked segment of this column have enough following to justify their inclusion. If you have any doubt as to the value of their inclusion each month please ask yourself the question "Am I really interested in what DX is worked by someone else in my locale or across the other side of the continent?" Your comments will be appreciated.

JY1 BIRTHDAY CELEBRATIONS

Mid November saw the proliferation of JY7 prefixes on the airwaves. This prefix was to celebrate the birthday of His Majesty King Hussein JY1. If you were fortunate enough to have seven different contacts (JY7ZH on 10, 15, 20, 40 and 80 metres would qualify as five contacts) you are eligible for an award which is presented by His Majesty. If the standard of previous awards that have come from the Royal Palace is anything to go by, this one should be a beauty.

Applications giving at least the listing of seven QSO's with JY7 prefixes noting date, time in UTC, call sign, frequency and reports exchanged together with 10 IRC's to assist in defraying postage expenses to "7 JY 7 DIPLOMA" PO Box 2353 Amman, Jordan. No QSL cards are required for this award.

QSL MANAGER QTH's

A number of QSL Managers who look after the affairs of more than one station always seem to be in demand and this list has been prepared in the hope that it will provide a ready reference of the QTH's of some of the better known card handlers.

WA3HUP (JY1, 8ZA, CE0AE, KP4KK/DU2, VQ9KK etc.)
Mary Ann Crider,
RD 2
PO Box 5A,
Yorkhaven Pennsylvania 17370
K3EST (HS1ABD etc.)
Robert G. Cox,
6548 Spring Valley Drive,
Alexandria VA 22312
W4FRU (ZD7HH, ZD9BV, ZD9YL, VK4NIC/3X, 3X1Z etc.)
John H. Parrot Jr.,
4640 Ocean View Ave.,
Va Beach VA 23455
DJ9ZB (A71AA, JY3ZH etc.)
Franz Langar,
Carl-Kistnerstrasse 19,
D 7800 Frieburg BRD
N4NX (3C0AC, WN4FVU/5X etc.)
William T. Barr,
305 Alphine Dr.,
Roswell GA30075
N200 (VS500, 9M6MU etc.)
Robert W. Schenck,
PO Box 345,
Tuckerton NJ 08087
W3HNK (HC8GI, etc.)
Joseph L. Acure Jr.,
PO Box 73,
Edgemont PA19028
SM3CXS (SM0AGD/--),
Jorgen Svensson,
Berghemsv. 11,
86021 SUNDSBRUK Sverige
K5VT (9U5AV, S9VCT etc.)
Dr Vince Thompson,
PO Box 32487,
Phoenix Arizona 85064
Yasme Foundation, (The Globe Trotting Colvins etc.)
PO Box 2025,
Castro Valley
CA 94546
WA4VDE (W4MGN/Africa tours, 6W8HL etc.)
William Dunbar,
RFD 5 — Box 107,
Canton Georgia 30114
DJ6SI (. . /5V, . . /3X etc.)
Baldur Drobnica,
Zedernweg 6,
D 5010 Berghiem BRD

Luis EA1VG

LUIS EA1VG

Luis EA1VG, a member of the LYNX DX Group and IDXF, classes himself as a newcomer to the bands having been licensed since late 1977. In this time he has achieved confirmations from 263 countries and certificates for WAS and WAZ.

The equipment used at the QTH consists of a Kenwood TS-830S driving a SB220 linear through a Drake MN2000 antenna tuner into a Swan three element Beam.

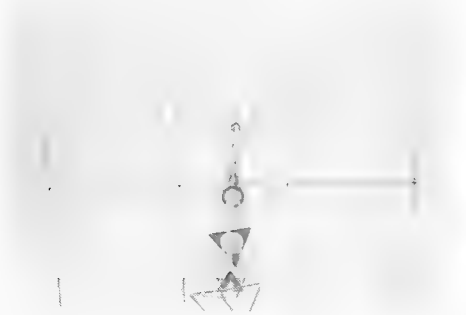
SCIENTIFIC APPROACH

Have you ever been on the twenty metre band and wondered why one VK3 station always gives and gets signal reports from any continent that are beyond your wildest dreams. I have and one has had to listen over quite a period to gather what equipment this best VK report gatherer is using. The operator of this outstanding home-brew station is none other than Ian, VK3MO.

Ian VK3MO looking for elusive DX??

Ian, who is rather shy in discussing his accomplishments so far, has forwarded numerous photographs and a brief description of his equipment to me so that readers of this column may better understand the experiments he is undertaking.

The antenna system, in which lies the heart of Ian's success, consists of three by four element yagi's on forty foot booms that are mounted on the tower at 46, 94 and 142 foot above ground level. The tower is fully rotatable using a chain drive mounted at ground level and is held in the vertical plane by guys which consist of 1 ½'' circumference polyester rope attached to bearings at the three levels.



From inside the tower looking up to the yagis.

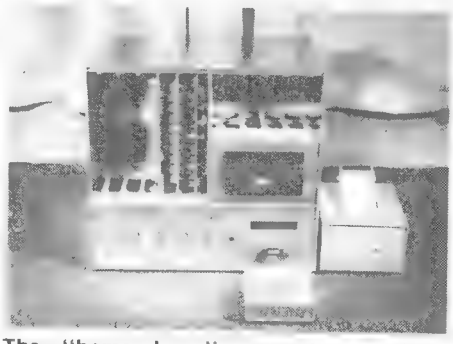
It is interesting to note that the yagi design was developed experimentally on 14 MHz by W0OKC and then scaled up to 440 MHz by Dr Jim Lindsay of the DENVER RESEARCH INSTITUTE, where the antenna was compared with other designs using an antenna range.

Ian's objective is to develop a computer based system which will automatically produce an optimum antenna radiation angle for transmissions to a specified target area. A ''home brew'' computer, specifically designed for this purpose, is on line and at his disposal.

Ian hopes to further develop the system along the following lines so that by sending out short pulses at various radiation angles and recording all the return signals (Back scatter etc.) he will be able to compare this data with signal strength reports and after correlation of the relationship of the two, be able to use the data programme produced to steer the antenna array automatically.

An example of how the system should operate in practice is given by quoting from Ian's notes to me. ''A sched is arranged with the UK. G is keyed into the computer. The computer will take control.

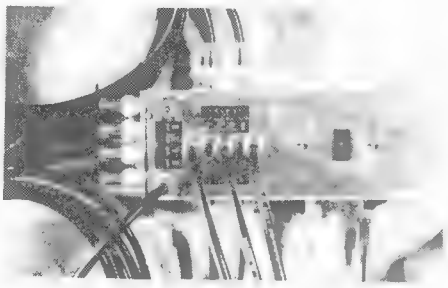
Ian's antenna system. The three, four element yagis are mounted 46, 94 and 142 feet above ground level.



The ''home brew'' computer used to produce optimum radiation angle.

Short pulses of RF will be sent out at various radiation angles. Using the data experimentally determined the computer will adjust the phasing between the three antennas to produce the best radiation angle for G at that instant.

An update every minute will keep the array focused on the target area. The update will oc-



The switching setup for the antenna system.

cur so rapidly both operators will barely perceive the brief interruption in speech etc."

Ian states that the ultimate system would no doubt have computers at both ends of a circuit, communicating with each other, and making decisions about parameters necessary for most effective communications.

So when you hear that BIG signal, generally on the airways very late at night, and the operator is diplomatically trying to go QRT and get away from the ever growing pile up so he may go to bed it is usually Ian. Congratulations on your station and best of luck on your endeavours with the current project, Ian.

Perhaps, Ian, at a later date may be able to be persuaded to write a technical article on the aspects of the development and findings of his experimentation for Amateur Radio.

SV9 CRETE ACTIVITY

Cliff KA2PFV/SV9, was doing very good business running with the help of Franco I1KFB acting as MC. All QSL's via KA2PFV either direct or via the Bureau.

PLEASE QSY

DXers have a pretty rough time in chasing the elusive stations that appear from time to time let alone being QRMed by a station appearing out of the "night" and working split in a "Rag Chew".

Oceania stations have a great habit of "splitting" to 28.595, 21.295 and 14.195 MHz and obliterating any DX that may be in the vicinity. Generally one cannot alert them to the problems they are causing because of being unaware of their receive frequency.

With DXpeditions in the offing for this year, that are costing thousands of dollars to get underway, it would be appreciated by DXers worldwide, if the minority could give way to the majority by leaving the prime calling frequencies free.

HEARD ISLAND

Dave VK3DHF, the licencee of VK0HI has laid some ground rules for the proposed operation on the island and it would be appreciated if all callers could abide by them.

Initial appearances when propagation conditions permit will be made on the recognised SSB DX working frequencies of 3.690, 7.090, 14.195, 21.295 and 28.595 MHz using transceive operation working through the callers by using the last letter of the suffix as an identifier in alphabetic progression, then split frequency operation to upper and lower nominated listening segments.

Novice and other class licencees not having these frequencies at their disposal will be catered for on 3.620, 21.190 and 28.595 and 14.280MHz and other frequencies initially using the alphabetical progression method of the last letter of the suffix when optimum propagation conditions exist to give the maximum QSO's per hour. CW operation will commence 25kHz inside each band edge, shifting as QRM and operating techniques dictate. BINT SERVICES of Cheltenham Victoria have kindly donated three sets of computerised beam headings for the operators convenience which will further add to the efficiency of the operation.

Dave, as leader of the Radio Component of this DXpedition wishes to accommodate all callers and trusts that common sense and operating ethics are maintained.

Dave and his co-operators, Chuck and Freds' sanity is dependant on your operating technique, patience and station efficiency. Names, QTH and weather conditions are superfluous and may deprive a fellow amateur of that valued contact.

Dave also envisages working controlled Net operation, as time and propagation conditions allow, which will be a deviation for a more relaxed operation.

All cards to be in correct date, UTC and RS(T) format which will expediate checking and prompt returns.

On behalf of all DXers, Dave, Chuck and Fred thank you for a positive approach and statement on your intentions. Best wishes to all that sail in ANACONDA II for a pleasant, safe and successful trip.

Good DXing ladies and gentlemen and please remember amateur radio is a hobby to be enjoyed by all.

VK0HI
DIRECT QSL INFORMATION

NORTH AMERICA via N2DT

REST OF THE WORLD EXCEPT JAPAN via VK6NE

QSL route for Japanese operators to be announced

ALEX VK5CCT

Alex, quite well known for his operation from Cocos (Keeling) Islands signing as VK9YA has now been stationed in West Malaysia and has made application for a local call.

Further information that has been passed on by Ian VK5QX is that the beam that Frank VK9NYG has been using will probably be returned to VK for use as a backup for VK0HI and on its return from down south it will be returned and stored for use on VK9 or any other location where it can be used to advantage.

PREFIX CHANGE?

Remember the XZ5 and XZ9 duo located in the Kaw Thoo Lei Province which isn't recognised by the Burmese Central Administration? They have now changed their prefix to 1Z0. One cannot help but wonder if this is an Oriental ploy to increase the chances of a reversal of the ARRL's decision on the acceptance of cards for DXCC credits or is it a method to increase the volume of the incoming managers already dwindling mailbag. Whatever is the eventual outcome of any decision on these stations validity one cannot speculate but it can be assured that someone, somewhere, with connections attributable to the new "PREFIX" will be counting the "green stamps" with glee.

THANKS

Due to the Holiday season and printing deadlines these notes were prepared in mid November from information received through the courtesy of VK's 1MM, 3PBA, MO, UX, DFD, 5QX, 6IH, HD and Eric L30042. Thanks to one and all.

QTH's YOU MAY NEED

4Z4BS PO Box 10191 Tel Aviv, Israel.
5B4LY PO Box 375, Larnaca, Cyprus.
DX1F PO Box 160, Quezon City.
FM7WD PO Box 879, Forte de France, Martinique.
FO8FW PO Box 5006, Tahiti
HI8APL PO Box 2318, Santo Domingo, Dominican Republic.
KC4AAA PO Box 500, FPO San Franciso 95603 USA.
T30BY PO Box 34, Tarawa Atoll, Kiribati
YJ8LT Lailla Gaetan, PO Box 88, Port Vila, Vanuatu.

QSL ROUTES

3D2RW (ZL1AMO), 4D9RG (DU Bureau), 4N4BT (YU4ALM), 4N4TN (YU4HA), 4U1VIC (OE3OLW), 5Y4CS (JI1VLV), 5W5EJ (W0WP), 9Y4VU (W3EVW), FK8CE (K2ROR), FM7CF (WB3AKI), HB0AYX (HB9MM), IY4FGM (I4BFY), HZ1MZM (HR1RMG)
( ) denotes manager.

AR.

Faces Behind the Key and Microphone

John I8SAT

Sig OE6KDG

Tricia VK6KI

Joe N5AMP and Judy WD5IPH

AR SHOWCASE

KENWOOD R-2000 COMMUNICATIONS RECEIVER

The R-2000 provides outstanding performance through the use of microprocessor controlled operating functions, allowing maximum flexibility and ease of operation throughout its operating range.

This all mode receiver covers 150 kHz to 30 MHz in thirty bands on SSB, CW, AM and FM.

Key features include stable digital VFO's, ten memories that store frequency, band and mode information, memory scan, programmable band scan, fluorescent tube 100 Hz resolution digital display with dual 24 hour dual clock with timer.

The high performance receiver circuits have three built-in IF filters with narrow-wide selection switch (CW filter optional), all mode built-in squelch circuit, noise blanker.

A large front mounted speaker, RF step attenuator, tone control, AGC switch, SINPO scale "S" meter, lithium battery memory back up and 100-240V AC operation round off this appealing receiver.

Further information may be obtained from Trio-Kenwood or any of their dealers.

AR

NEW EMI/RFI SHIELDING OF ELECTRONIC COMPONENTS

Scientific Electronics, Australian agents for the Sil-Pad range have released details of Sil-Pad Shield, a physically tough, greaseless product which provides excellent shielding characteristics coupled with low thermal resistance and high dielectric strength.

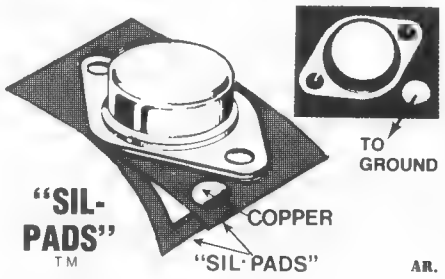
The shield consists of a 1 mil copper sandwich bonded between two layers of calendered 9 mil Sil-Pad. Part of the copper is exposed for the attachment of an earth lead to drain off the unwanted signal.

It can be used to shield any electronic component which could be emitting a frequency or a magnetic field. The copper absorbs radiated emissions that have a frequency of 10 kHz or more at a level of 60dB or higher, which is generally considered excellent. If a lower frequency is a problem thicker copper can be specified.

Components that can utilise the shield include high speed switching transistors, relays, oscillators, DIP packages, chips etc. In a lot of instances, attenuation at component level will prevent the radiated signal from penetrating and interfering with other components and will also, in some cases, preclude total case shielding.

Shapes currently available are TO-3 and TO-220. Non standard shapes can be produced on request with a lead time of about eight weeks.

For further information contact: Mr Peter Lloyd, Scientific Electronics, 6 Holloway Drive, Bayswater, 3153. Telephone (03) 762 5777.



AR.

WICEN NEWS

Ron Henderson VK1RH
Federal Wicen Co-ordinator

171 Kingsford Smith Dve, Melba ACT 2615.

CHECKLISTS

Many issues ago I reprinted a VK1 equipment and kit check list for WICEN operators and suggested it might be an idea to pack it into a couple of cartons, boxes or old suit-cases held ready in the workshop or garage for a callout or exercise. Since that issue I chanced to see a similar list printed in a recent QST, however the US amateur emergency communications co-ordinator concerned had enough gear to fill a one tonne utility. Nevertheless this does serve to demonstrate that equipment checklists are a very personal thing, indeed some people can get by with a sweater, change of jeans, thongs and a plastic money card but any fool can be uncomfortable.

Also from a sister magazine, a recent RSGB Radio Communications RAYNET column discussed amateur communicators' dress. The writer's point was that for emergencies clothing was generally chosen to suit the need weatherwise; but for training exercises in civic aid situations many amateurs left much to be desired appearance wise. The columnist, an active RAYNET co-ordinator had an opportunity to view the voluntary communications for a recent major event from the public's side and concluded that amateurs should dress no worse than their companion emergency service and relief agency communicators for public events.

ITEMS OF LEAST VALUE

Uncle Roger of Flight magazine recently ran an article calling for readers contributions on "items of least value". The aviators response was "runway behind the aircraft", should WICENs be flat NiCads in the handheld, or microphone home in the shack?

THE FUTURE FOR WICEN

Next issue I will attempt a review of WICEN and what the future holds; do you have any thoughts on this matter? I would be glad to hear from them so drop me or the editor a line please.

73 Ron VK1RH

AR.

WIA INSERTS INTO AR

☆

NOTICE TO WIA ZONES, CLUBS AND GROUPS

WIA Zone, Club and other Group Secretaries are hereby notified that inserts into AR henceforward will be accepted ONLY direct from a Division and then only by prior arrangement with the Secretary.

All inserts must comply with Postal Regulations and must be received not later than the 26th of the month preceding publication date.

COMMERCIAL KINKS

FT290R BATTERY PACK BLOW-UP PREVENTION

by Theo Vidler VK1KV

Having heard of several cases of battery pack blow-ups in Yaesu FT290R two metre rigs I resolved that it would not happen to my FT290R.

The cause of the blow-up is the application of an excessive voltage to the battery pack. This may occur when the rig is operated from an external DC supply if the switch in the external power socket JO5 fails to operate. This may occur due to either improper switch action or improper insertion of the external power lead. The result of this is to supply 13.8 volts to the internal battery pack. With nickel cadmium cells this will cause an excessive charging current leading to rupture of the cells. Ordinary dry cells or alkaline cells will suffer also.

I have therefore fitted a 50 PIV 3 Amp diode between the internal battery pack and the switch contact of JO5 as shown in Figure 1. This arrangement prevents the 13.8 Volts from the external power supply being applied to the battery pack if the spring switch on the Ext DC jack JO5 fails to operate on insertion of the external power supply plug.

The additional diode does not prevent operation on the internal battery. The diode does cause a small voltage drop on the supply voltage from the battery. In my view the protection afforded to the NiCads or alkaline cells is worth more than the small voltage drop.

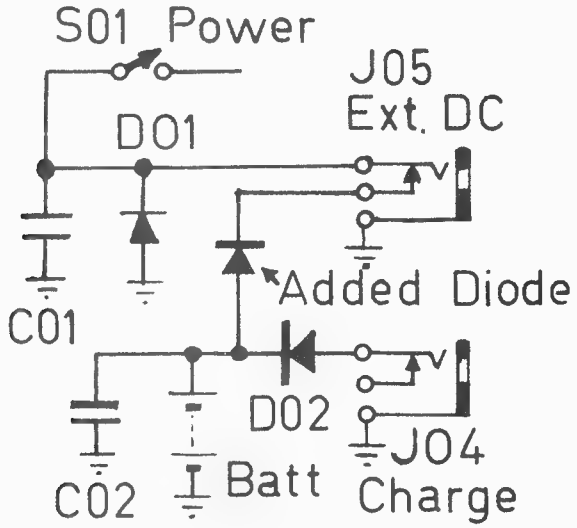


Fig 1: FT290 R External DC Modification.

Fitting of the diode is simple—

1. *Remove Cells.*
2. *Undo 4 Phillips screws.*
3. *Remove battery carrier.*
4. *Cut red lead to battery carrier positive terminal.*
5. *Solder in Diode with cathode looking at P/S Socket.*
6. *Insulate soldered leads.*
7. *Replace battery carrier, screws and batteries.*

I understand that a diode has been wired into the FT690 and the FT790 to perform this function.

On looking at a Yaesu FT208 hand held circuit it would appear that it might possibly suffer from the same problem and warrant the same protection.

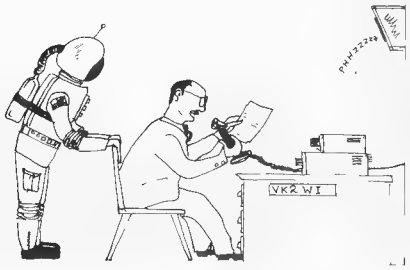
Technical Editor's Note:- *Examination of the circuit of an FT690 revealed a protection diode in the negative External DC connection. Whilst this would provide protection normally without the battery voltage drop of Theo's modification it may not work in all situations. Should an external antenna be connected which has the coaxial braid connected to the negative of the 13.8 V External DC source then the protection circuit will be inoperative. This may be reasonably expected to occur if mobile operation in a car, using an antenna fixed to the car, is intended. If such operation is intended then a modification such as that described by Theo VK1KV would be appropriate.* VK3AUI **AR.**

Chuckle Corner

with Bill VK2EBM

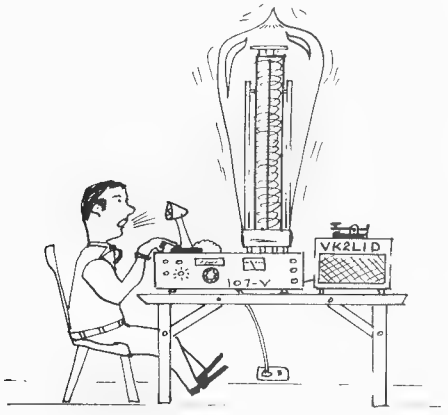
"Speak up OM — you've gone right down"

"Here is the IPS report just handed to me"



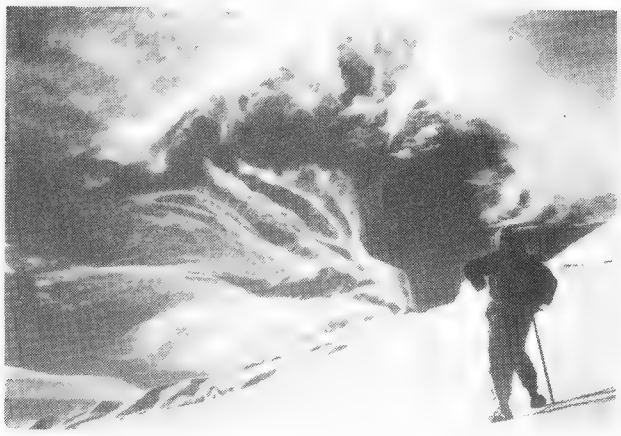
(. . . That's funny — I can hear the sea . . .)

"Yes OM — all solid state . . . except the final"



DXpeditions! Are they worth the trouble?

Hugh Spence VK6FS
VK6 DX Chasers Club



ANARE photo by G Budd

Mounting a DXpedition to one of Australia's Island Territories is not a case of just hopping on a plane or ship with rig under the arm, and upon landing, looking for a likely motel or some other place to set up shop.

For Cocos and Christmas Islands one must have accommodation guaranteed by a resident and a permit from the Administrator of the Island. Heard Island is slightly different in that there is no permanent population (human) so application for permission to land must be made to the Department of Science and Technology in Canberra. After many letters to and fro the application, if found in order, is then sent on to the Antarctic Division, who also consider it, and if found in order, then, and only then, a permit will be issued by the Department of Science and Technology.

This may have seemed straightforward so far, BUT, prior to submitting the application, the Department of Sc & T will have issued a set of guidelines to be observed by people wishing to go to Heard and McDonald Islands. Also a questionnaire to be answered.

Do not get me wrong, I am not knocking the Department. All this is vitally necessary to protect the extremely fragile ecology of the islands. This group of islands is extremely unique in this world in that no foreign animals or plants or diseases have been introduced by weekend trippers, such as has been the case with many of our off-shore holiday resorts.

Guidelines for a permit cover many things, the 12 most important being:

1. *Application to be submitted four months prior to departure.*
2. *Tour is to be adequately equipped for the severe weather and ocean conditions.*
3. *Tour is to protect the environment.*
4. *Group must be competent in navigation, landing of personnel and equipment ship to shore, ability to live in antarctic conditions.*
5. *Tour must be equipped with all necessary safety aids both at sea and ashore, self contained in relation to precautions for emergencies, should not depend on government assistance if it gets into trouble.*
6. *Tour must provide own shelter.*
7. *Safety of the tour members is the responsibility of the organisers and the government may require a signed release of responsibility.*
8. *Organisers should arrange own insurance of personnel and equipment.*
9. *If Australian Government personnel are on site, there is to be no interference with them, their work etc, and any buildings used must be left as found.*
10. *The number of visitors will be limited and tourists must not stay overnight.*
11. *Expeditions may apply for longer stay.*
12. *Bona fide scientists may apply to collect limited specimens.*

INFORMATION REQUIRED INCLUDES:

1. *Name of vessel.*
2. *Size and description including capability under power.*
3. *Number of persons going ashore.*
4. *Nationality of visitors.*
5. *Cold weather experience of organisers and members.*
6. *Purpose of visit — include proposed activity and any temporary buildings that may be erected.*
7. *Localities proposed to be visited.*
8. *Dates, timetable and duration of visit.*
9. *Means of transport ship to shore.*
10. *Equipment to be taken ashore including camping, medical, food, clothing and communications.*
11. *Ports of departure and return.*
12. *Details of radio frequencies and skeds, both at sea and ashore.*
13. *Any other questions thought necessary (this last one could develop into a lulu).*
    NOTE: Expeditions are subject to the Environment Protection (Impact of Proposals) Act 1974.
14. *A full report of activities must be sent to the Department of Sc & T within six months of return.*

NO NO's:

Don't even think of killing, wounding, molesting, or even scaring penguins, seals, birds, etc, or disturb their living conditions, e.g. don't raid bird nests, don't walk on the grass or pick the daisies, and don't take the family cat, plants, ticks, fleas, diseases, or your own picnic ants, etc.

Don't try and sneak back with eggs, penguins, seals, etc, without permission. No cars, trucks or trail bikes allowed. Always move slowly when approaching bird colonies, but keep away from seals with pups (daddy seals won't like it). No guns or explosives, and no lighting of fires in the open or erection of permanent holiday shacks. Choppers to keep clear of nesting birds as the rotors scare them. And keep out of restricted areas.

WASTE DISPOSAL:

1. *Solids such as food scraps, tins, plastic, wire, batteries, etc, must be carted away for disposal at sea outside territorial waters.*
2. *Definitely no littering. (Didja drop somethin' sport?).*
3. *Liquids must be macerated and flushed out to sea (or) deposited in deep holes away from fresh water channels, swamps, etc.*
4. *Pits to be filled in prior to departing.*
5. *Oil must not be discharged at sea if liable to harm the territory, etc.*
6. *In the event of hasty departure a list of all alien material left on the island and its exact location must be notified to the Department within two months.*
7. *Bulk fuel can be carted in metal drums only; definitely no plastic containers or fuel bladders and all empty drums must be removed*

In other words, no weekend revellers will be allowed to land. The government does not wish to spend taxpayers' money to pull anyone out of the place. They certainly do not want spray can graffiti painted all over the island.

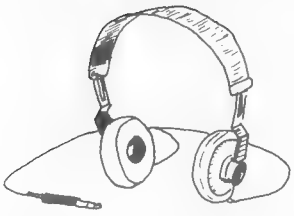
It may be of interest to know that the submission from the VK0HI Heard Island Expedition 1983, filled 68 foolscap pages. Quite a book.

If anyone still has doubts as to the necessity for any of the above questions and rules I would suggest they read "Sea and Snow" by Philip Temple for a description of the Patanella Expedition and its trials and tribulations. Also "Ice Bird" by David Lewis gives a good description of ocean conditions around latitude 60° south. Also our own Jon Sanders will have a mighty tale to tell after sailing single-handed twice round the world.

Even though I may have seemed to introduce some levity with the rules, it was in no way intended to be derogatory of the department. They are to be commended in their stand to try and preserve this ecologically unsullied island, and its surrounding islands for posterity. Heard Island is unique in that it is one of the world's few remaining wilderness areas.

AR

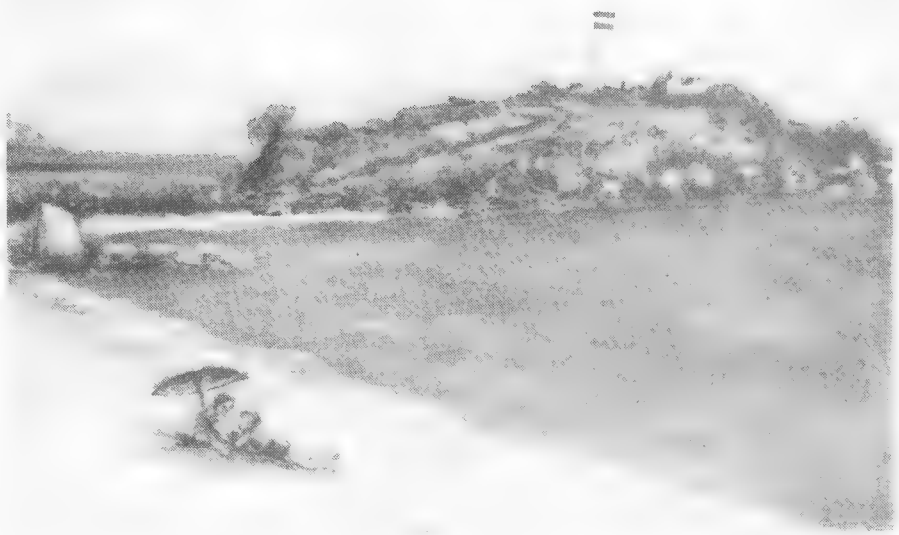
LISTENING AROUND



Joe Baker VK2BJX
Box 2121, Mildura Vic, 3500

THE FULL STORY OF REG, W6ITH

Some of you may remember my reference some months ago to W6ITH then of Whittier, California, a station that I used often to listen to on 20 metres in pre-war days when I was an SWL in Sydney. Well, that story evoked an immediate response, first from my good friend Alf Ah Gee VK3DBV of Merbein, Victoria, who sent me the QSL card that Reg Tibbetts W6ITH, now of Morgana, California sent to him and which you saw published with my story, then came a letter from W6ITH himself.



Reg Tibbetts PJ2MC card which features an oil painting by Mrs Louise Tibbetts at Sint-Maarten in 1956

This is what Reg wrote:

"Several Australian amateurs I have talked with recently kindly sent me the page with your column 'Listening Around' from the March issue of Amateur Radio.

"Very interesting column and I enjoyed reading same.

"Since you mention if 'W6ITH is around today', I thought I would write to you and say hello and that I am still as active as ever and still around even though I was 71 this month (May).

"Have been on the air since 1927, first as 6PD (no prefix then) and have had W6ITH since the early 1930s. And to give you a better story I have enclosed a copy of my Professional Biography which will give you some details of my activities over the years. Have been very active on SSB, all bands 160 through 10 metres, and hope I will have the pleasure of talking with you before too long.

"Have enclosed my current QSL together with my 1936 QSL card and my card from PJ2MC which I operated 1956-1969 at intervals when I stayed at my home on Saint Martin Island in the West Indies. Also operated FS7RT, VP2MR and VP0RT (Anguilla) when there during these years."

So ends his letter and here are some of his achievements as mentioned in his Professional Biography.

Reg was born in Berkley California, where he attended various schools including Menlo College, Menlo Park California (and wasn't it Thomas Alva Edison who was called "The Wizard of Menlo Park" for his many inventions?)

Later he attended the University of California where he got his BS in electrical engineering and communications, later became a member of the California Engineering Council, the Circle C Society, the Lambda Chi Alpha Fraternity, and the Theta Kappa Nu Fraternity. (Unfortunately Reg did not explain to me what these societies are all about).

In 1926 he designed and installed the first Pacific Coast Police Radio System at Berkley, and in 1934 invented the portable shortwave radio telephones first used during construction of the San Franciso-Oakland Bay Bridge, a painting of which, painted by his wife, appears on his QSL cards. The use of these radios saved the State of California and bridge contractors over one million dollars in construction costs, and they also laid the foundation for two-way police and industrial radios which are now in widespread use.

Reg's QSL card 1936 style

Current W6ITH card

Between 1930 and 1979 he was responsible for the design, installation, and operational maintenance of private telephone, signal, radioteletype, and data systems, and between 1966 and 1972 was directly responsible for the design, construction and implementation of multi-million dollar electric power generating facilities, communications, relay and receiving installations in the West Indies, Venezuela and Brazil.

And just to keep him busy in his spare moments when he's not been doing anything else, between 1950 and 1970, he developed — under contract to the Manhattan Project, US Army Corps of Engineers (later to be known as the Atomic Energy Commission) radiation detection instruments used nearly exclusively for the atomic bomb project and postwar atomic tests in the Pacific by the Atomic Energy Commission. Production of these instruments continued until 1968 for use in laboratories and industry for peaceful uses of atomic energy.

Between 1931 and 1966 Reg was chief engineer for United Press International where he was in charge of communication systems, and was responsible for the design, installation and operational maintenance of all worldwide radio communications systems for UPI, including RTTY, radio-photo and audio voice news event circuits. In 1963 he had additional duties as communications consultant to the Chairman of the Board of UPI.

And winding back the years a bit, between 1941 and 1945 he established jointly for UPI, US Dept of the Navy and the US Office of War Information, the intercept receiving station which copied numerous Japanese and Russian radio transmissions and was the prime source of news from enemy Asian territories.

Via the facilities of this intercept station, many news beats were received ahead of all other sources. Among these were the Doolittle bombing of Tokyo, the Japanese capture of Singapore and the East Indies, the shooting down of Admiral Yamamoto and the Japanese offer of surrender as well as the Japanese offer of surrender terms.

Reg Tibbetts, W6ITH was also engineer in charge of the office of War Information for secretly established communication circuits between the Republic of China and the US at San Francisco. From radio transmitters secreted in caves near Chungking, China, hundreds of radiophotos were successfully transmitted and received near San Francisco.

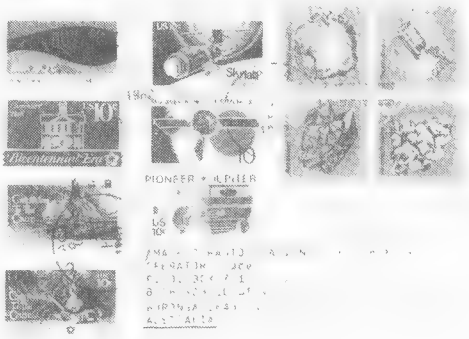
His honora and special achievements include being a registered professional electrical engineer in the State of California, a Life Member, Second Grade of the Institute of Electrical and Electronic Engineers, the author of many technical, and popular radio communications and electronics papers published in English and foreign languages. As a youth he was runner-up in the Thomas A Edison National Intelligence Contest for young men and was selected as being in the "higher than genius" group, for life study by the Stanford University and Dr Lewis I Truman. He was the recipient of the American Institute of Electrical Engineers National Award for his paper on the San Francisco-Oakland Bay Bridge Construction radio telephone system.

As an amateur radio operator he is licensed with the FCC as Radiotelephone First Class and Amateur Advanced Class with his call W6ITH, and is a charter member of the Northern Californian DX Club.

Reg Tibbetts — amateur extraordinaire

They say that Thomas A. Edison was called "The Wizard of Menlo Park." If Edison was the Wizard of Menlo Park in his day, surely, after all his achievements Reginald Tibbetts, aged 71, and amateur radio operator W6ITH, must claim a similar honour today. My thanks to Reg for supplying me with the data on which this article is based, and I do look forward to the day when I have better equipment and can speak with him directly.

I almost forgot to mention that Reg appears to be a keen stamp collector for the envelope which carried his letter to me was almost covered with a variety of United States stamps, many of them publicising the US space activities. So if you decide to write to Reg at 2151 Camino Pablo, Morgana, California 94556, stick as many varieties of Australian stamps as possible on your envelope. I know Reg will be pleased to have them.



My thanks to those, who by letter or on air continue to say kindly things about this column which are most encouraging for the effort that I put into putting it together. Sometimes I find myself writing this under very difficult conditions, but it is all made worthwhile when I have such excellent feedback from what I write. I must apologise to those of you who will have searched the pre-Christmas issues and found "Listening Around" not there. This is because I missed the deadlines, but not to worry for there will be much more to come.

I'm writing this on the 4th of November so Christmas and New Year will have come and gone by the time you read this. Nevertheless I hope that you all will have a happy time, and that you will come up on "80" (approx. 3.590 MHz) almost any night around midnight so that I can speak to you personally.

73s, Joe VK2BJX

Please remember your STD code when you advertise in HAMADS.

COMPETITION WINNERS

The first correct answers drawn at random by Peter, VK3CIF from all entries submitted were winners of the handsome prizes donated by Bail Electronics for the Antenna Competition Quiz (Page 8 October AR).

The first prize a Yaesu RSL435 Collinear Array was won by:

J M Swan, VK2BQS
PO Box 93,
Toongabbie, NSW 2146

The second prize, a pair of Yaesu YH77 Headphones were won by:

F Robinson, VK3DDK
PO Box 173,
Prahran, Vic. 3181

If either winner does prefer some other article they are entitled to a voucher, redeemable on any purchase from Bail Electronics, which will be to the equal value of the prize.

The Publications Committee extends its sincere thanks to Bail Electronic Services for the donation of the prizes and to the many participants who made the competition possible.

Winners have been notified of their prizes by Mr Stan Roberts, Managing Director of Bail Electronic Services.

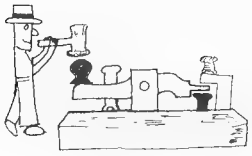
The correct answers to the quiz were 1 (d), 2 (c), 3 (a), 4 (b), 5 (b), 6 (b), 7 (c), 8 (a), 9 (d), 10 (b).

SPECIAL EDUCATION QSP

Brenda VK3KT has available:
Trial Exam Papers —
Theory, Novice, AOCP, Regulations.
Past CW Exams from DOC.
10 Exams at 5 w.p.m.
10 Exams at 10 w.p.m.
10 Exams fill a C60 tape. Send a tape and I will copy what you want onto it.
Complaints — or other comments — about Exam papers?
Make them known to your Federal Education Officer, VK3KT, QTHR, or on the Education Net, Wednesday evenings 12.00 UTC. 3.685 MHz±

WANTED

Any good technical articles for publication in AR



POUNDING BRASS

Marshall Emm VK5FN
PO Box 389, GPO Adelaide 5001

KEYS AND KEYERS (Part I)

To the newcomer to CW operation the variety of available keys and keying equipment must be bewildering indeed. In order to try to make some sense of it all, we'll discuss the gear in three groups — manual, mechanical, and electronic.

Manual keys range from compact heavy-duty models designed for incorporation in military transmitters to flashy works of art on marble bases, costing many dB. A morse key is really nothing but a switch, and you could use any on-off switch as a key. You could make a quite functional key out of scrap timber and junk metal, but before you spend a lot of money on a "good" key it is important that you understand the parameters. The most important factors are ease of operation, and operator comfort.

There seem to be two basic designs in use among the amateur population. Most Australians would be familiar with the "high mound" round-knobbed key of the British pattern. Design follows function, and in this case the structure of the key is determined by the operating style, which has the forearm held above the table. Americans, on the other hand, key with the forearm resting on the table, so a low-profile, flat-knob key is more appropriate. Why these two widely different styles have developed is beyond me, but it is safe to say that you should use the style which suits you best whether it is British, American, or African.

A problem with manual keys is that they get pounded, and therefore have a tendency to move around on the table. The solutions to this problem are legion. One of many found in "Hints And Kinks for the Radio Amateur" (published by the ARRL and available from the WIA) is to place the key on two pieces of fine-grade sandpaper glued back to back. Of course the only foolproof method is to bolt or screw the key firmly to the table, but for some reason this idea is unattractive to some (and understandably not the way to win the heart or co-operation of the XYL if you have to operate from the dining room table.)

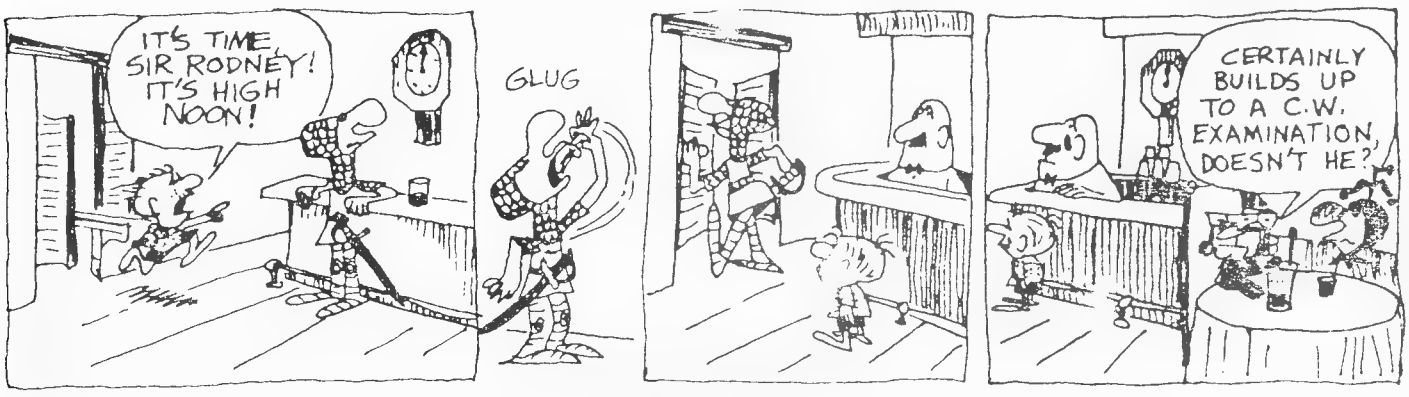
Mechanically, most people seem to prefer a key with a great deal of inertia in the key lever, so a fairly massive bar is preferred. Additional mass is given to many keys by building them onto a heavy metal or even marble base, which helps to keep the thing in one spot as well as contribute to the price.

As far as the engineering of the key is concerned, there isn't a whole lot of variety. Adjustment to spring tension and contact spacing is usually, if not always, provided for, but you should ensure that once set, these adjustments won't move. Contacts should meet squarely or arcing will cause a build-up of dirt. Contacts should be cleaned by drawing a piece of paper between them; THEY SHOULD NEVER BE FILED. If there is an apparent need to file them, something else is grossly wrong.

Most of the keys readily available to the amateur are of good quality, and it is just a matter of finding the one that "feels right." The cheap and nasty keys that come with practice oscillators should be avoided like the plague, or you will develop bad keying habits in order to compensate for a bad key.

The best advice for the prospective purchaser of a key is to try several varieties so you can determine the type that suits you best — before spending a lot of money on the "lifetime" key with contacts of gold.

Next month we'll talk about mechanical keys and electronic keyers. Till then, 73 and keep pounding.



from "Propagator"

INTRUDER WATCH

Bill Martin, VK2EBM,
FEDERAL INTRUDER WATCH CO-ORDINATOR

33 Somerville Rd., Hornsby Heights,
NSW, 2077.

Whilst preparing the Intruder Watch column this month, I was reminded of a few lines from Samuel Coleridge-Taylor's "Rhyme of the Ancient Mariner", which, slightly altered, becomes applicable to the intruder-plagued radio amateur.

"Intruders here, Intruders there,
Intruders all around,
They pulse and growl and roar and howl,
AND WE DON'T MAKE A SOUND".

"We", of course, being the long-suffering radio amateur, who SHOULD BE making sounds.

To keep on with the task of trying to rid the amateur bands of intruder stations, we must indeed make sounds; and we can do this via the convenience of the Intruder Watch, whose function is to make the sounds on your behalf. The Intruder Watch collates the sounds of fed-up amateurs whose QSOs are continually being interfered with by intruder stations.

Transfer the sounds of your indignation to paper. Put down the facts of the intruder's transgression, and send the details to your Divisional Intruder Watch Co-ordinator. Your objections to intruders are solicited, and you, **AND ONLY YOU,** can supply the Intruder Watch with the ammunition it needs to fire broadsides at the persons responsible for the intrusions. Reporting intruders is not an arduous task. Merely jot down the details of the offender's transmission, and send in the report. The more, the better.

As I've said so often before, intruders are not at all impressed by the odd complaint from some irate amateur. But great numbers of complaints are an entirely different thing. This is why we must have many people combining forces against a common enemy. Without the help of the listening amateur, the Intruder Watch would be, *"As idle as a painted ship upon a painted Ocean"* as the Ancient Mariner tells us. If we have no reports, we have no effective Intruder Watch . . . if we have no effective Intruder Watch, we must then see an increase in the numbers of intruders on the amateur bands. **WE DON'T NEED THIS.**

Make the effort to send in reports of any intruders you hear on the bands. There are plenty from which to choose.

We're still looking for reports on the Russian Merchant Navy station, "UMS", which transmits daily on 21.032 MHz, using RTTY and CW. Come on you CW buffs, help us to get rid of him, and get more room for amateur operation. Let HIM find somewhere else to operate. It is, after all, OUR frequency.

Don't forget, if you send me a blank C60 cassette tape, I will return it to you with examples of all the modes of emission to be found on the amateur bands, some of them forbidden to amateur operators, and explanations of modes.

Send any reports to your Divisional Intruder Watch Co-ordinator. You can find his address in Amateur Radio, October, 1982. HELP TO KEEP THE AMATEUR BANDS FOR AMATEURS.

AR

WHAT THEY SAY AND WHAT THEY MEAN

(Another one of those th ngs)

YOU HAVE MY SUPPORT: "You do it, and I'll take credit."
IT'S IN THE PROCESS: "We forgot about it until now.
I HAVE A CONFLICT: "My wife won't let me go."
IT FITS MY SCHEDULE: "She's visiting her sister."
AN EDUCATIONAL INNOVATION: "Anything we didn't do last year."
A PROJECT: "Any activity requiring more than ten minutes."
A PROGRAM: "A project requiring more than one phone call."
IT'S BEING CO-ORDINATED: "His secretary eats lunch with mine."
A RELIABLE SOURCE: "I just met this man."
AN INFORMED SOURCE: "The guy who told the man I just met."

AR

ISN'T IT STRANGE?

(An Oldie)

When the English tongue we speak
Why is break not rhymed with freak?
Then tell me why it's true
We say sew and likewise few.
And the writer of poetic verse
Cannot rhyme his horse with worse?
Beard sounds not the same as heard,
And cord is different than word.
Cow is cow but low is low;
Shoe never rhymes with foe
Think of goose and then of choose;
Also comb and tomb and bomb;
Doll and roll and home and some.
And since pay is rhymed with say,
Why not paid with said, I pray?
We have blood with food and good
Mould is not pronounced like could.
Is there any reason then, that we
Have sounds and letters disagree?

AR

BOOK REVIEW

Gil Sones VK3AUI

Moore Street, Box Hill South, Vic. 3128.

How to Buy and Convert Surplus Electronic Equipment

By Mark S. Starin.

A very comprehensive book with full circuits, alignment and conversion details for a number of USA surplus items. The equipment covered is from the Korean War up to the Vietnam War. Such equipment may well be found locally due to the Australian involvement in both wars.

The equipment covered includes two commercial items found in the USA.

Detailed information is presented for the following items:

RF Communications Co-Pilot Transceiver; AN/TRC-77, AN/PRC-6, RT70-GRC, RT-66, RT-67 and RT-68 Transceivers; AN/GRC-9 and AN/FRR-36 Receivers; and The Motorola Handie-Talkie.

If you have any of these items of surplus gear and are looking for information then this book will provide you with all the details you need.

Published by TAB Books Inc.

AR.

ELECTRONIC HOBBYIST!

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Ringwood, Lilydale,
Boronia, Wantirna,
Bayswater,
Mooroolbark etc? . . .

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This month we have permission from Mr Dick Levine, Editor of Electronics News, to reprint an article written by Peter W. Grant, published in the May 1982 issue, pages 30 and 31.

The article titled "Quietening switching power supplies" should prove extremely interesting to all interested in EMC.

NATIONAL EMC ADVISORY SERVICE

Tony Tregale VK3QQ
Federal EMC Co-ordinator

38 Wattle Drive, Watsonia 3087

Quietening switching power supplies

By adjusting impedances of internal and external noise loops and using EMC approaches, noise reduction is possible.

By Peter W. Grant, IBM Corp.

When designing power supplies requiring lightweight and small physical size, the transistor switching regulator (TSR) is an increasingly popular approach.

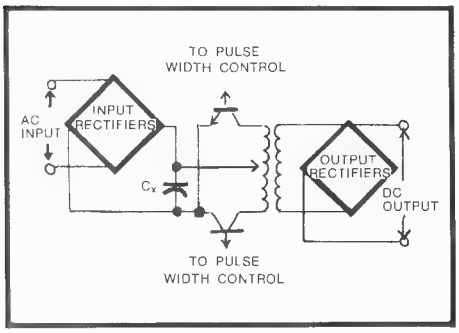

Figure 1. A fundamental transistor switching regulator circuit. AC power is rectified, stored in bulk. Capacitor C_x and then switched across the transformer primary winding by the transistors.

In such a design, prime power entering the TSR (Fig. 1) is rectified, stored in the bulk capacitor C and then switched by transistors across the transformer primary winding. Several hundred volts (at high currents) are switched at kilohertz rates, creating both audible and electronic noise. This unwanted electronic noise often spills into adjoining circuitry causing severe interference problems.

The reason why noise is generated in a TSR lies in the method of voltage regulation. The high degree of regulation obtained is achieved by adjusting the switched current's pulse width instead of the former method of quiet, dissipative series regulator circuits. But switching high voltages and currents creates electronic noise.

The usual "brute force" shielded-enclosure method of containing electrical noise consists of totally surrounding the noise source with a metal shield (Fig. 2). E (electrical) and H (magnetic) field radiation is reduced but feed-through capacitors must be used on all wires entering or leaving the enclosure, thus increasing the shield's cost. The capacitors can also put prime power voltages on the shield if it is not securely grounded.

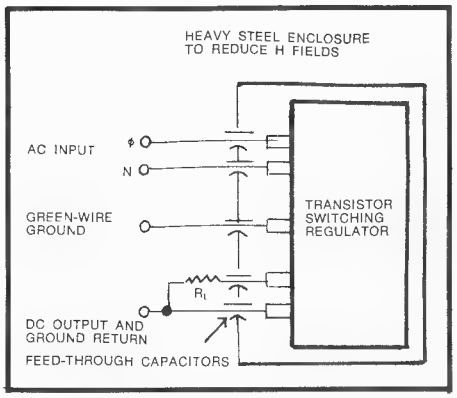

Figure 2. Brute force shielding of transistor switching regulator is a common method of containing the regulator's electrical noise. It consists of totally surrounding the noise source with a metal shield to reduce E and H fields, and requires the use of feed through capacitors on all wires entering or leaving the enclosure, thus adding greatly to the cost of the regulator's design.

There are other methods by which noise in a TSR can be controlled. These include lowering the impedance of internal circuit noise loops, increasing the impedance of external circuit noise loops and other electromagnetic-compatible (EMC) circuit approaches.

NOISE SOURCE

The main source of noise in the TSR is the sudden charging and discharging of the parasitic capacitances of the transformer winding, the transistor-to-heat-sink space, and the wiring by the basic TSR action of switching high currents and voltages.

The charging source is the bulk capacitor; so with the capacitor, transformer, transistors, and wiring making a complete circuit (small loop) there seems little reason for charging current to enter the outside world. However, the impedances of this small loop are irregular and some components have grounded heat sinks or cases through which current is dissipated to the entire TSR (larger loop) and thus to the outside world.

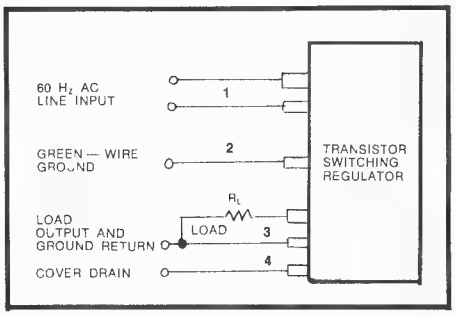

Figure 3. Noise from a transistor switching regulator leaves or re-enters the regulator's case by four ports; (1) prime power entry, (2) green-wire ground, (3) remote load grounding, and (4) the capacitive coupling drain-wire.

Noise from the TSR that could interfere with an associated system must leave and re-enter by four ports in the TSR's case. Referring to Fig. 3, they are (1) prime power entry, (2) green-wire ground, (3) remote load grounding, and (4) the capacitive coupled drain wire. This fourth and last port consists of the path of noise as it radiates to the case (spacecharge).

In reducing noise from the TSR, an understanding of the terms "differential mode" and "common mode" is required.

Differential mode (DM) refers to a system of conductors, usually a pair, having a signal contained in their voltage difference. In a simple single-ended DM system, the return line and the transmission line form a differential pair which contains the total signal. Also, the sum of conductors carrying current in one direction and the sum for the opposite direction could be called a DM pair.

In most cases, if the return current is divided among elements of a common return, the signal line and one element of the common return would not make a DM pair. The grounding or common return elements would constitute a common mode (CM) system, referred to as a system of conductors where a signal is common to two or more conductors.

If currents going past an observation point on the transmission line have their direction in common, they are common mode. If their directions are different, they are differential mode. That is, for differential mode the currents must be equal and exactly opposite in phase. For common mode the currents must be evenly divided among the impedances of the various conductors and exactly in phase.

The small charging circuit (small loop) in the TSR becomes part of a common-mode circuit when the current in the circuit finds a common-mode return. This return is found via the transformer secondary, out through the DC bus, through logic ground, to prime-power ground, and back through prime-power wires through the rectifiers to the bulk capacitor, and also via radiated paths. These paths can be traced with a current probe and scope; ie, a particular spike can be seen leaving by the power line and returning by the ground wire.

DESIGN CONSIDERATIONS

It would be ideal to design the small loop in the TSR so that the generated noise could be contained in the loop. However, since parasitic capacitance exists and energy escapes through transistor cases, heat sinks, etc., current is transmitted to the larger loop, which consists of the entire TSR. It would be difficult, if not impossible, to design the small loop in such a manner that no energy would be converted to a common mode and allowed to escape. But, the larger loop (entire TSR) can be "noise-shorted" so that the noise mainly circulates inside the TSR, without allowing ripple current and without seriously shunting any external series regulator.

If small spikes of ground current remain, they can be reduced in amplitude and frequency by winding the AC wires and green-wire ground around ferrite cores (common-mode impedances). Six turns of the twisted-pair AC wires around an X-30 ferrite core will reduce the spikes by a factor of 10.

The core has to be used with twisted-pair wires since each wire carries large amounts of prime current that would saturate the core, making it useless. Since the sum of AC currents in the twisted pair is zero, the core only sees common-mode noise.

Both wires of a pair (each of the AC wires or the positive and negative wires of a DC output) are sufficiently high-frequency coupled so only one wire of a pair is needed for noise shorting, as previously described. Since a large capacitor to AC neutral is used, another capacitor to the phase wire is, in effect, only parallel to the neutral one.

Noise energy that leaves the TSR by capacitive coupling must return by another port. A five sided metal box enclosing the TSR would simulate capacitive coupling. Such a box simulates a machine's frame and the fourth TSR port. Noise is capacitively coupled to this box and must be dealt with.

The ungrounded box supplies a nice gaussian shield, but safety requires grounding it. Grounding the box to the frame allows an increase in high-frequency energy to circulate and the impedance of the loop outside the TSR can be increased to further reduce currents outside the TSR.

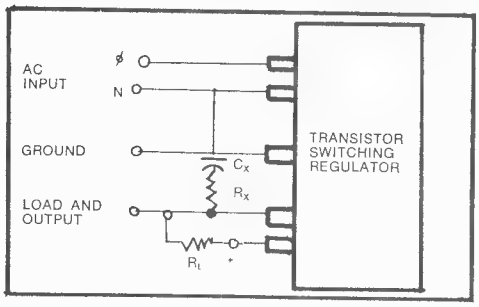

Figure 4. Noise can be "shorted" in a transistor switching regulator by placing a high-frequency capacitor C_x between the AC neutral and output. A series resistor R_x is added to dampen tank-circuit oscillations.

As a start, a high-frequency capacitor is placed across the bulk capacitor C as close to the transformer and transistor as possible. Adding a large high-frequency capacitor between the DC output and AC input (Fig. 4) reduces externally circulating ground currents significantly. A series resistor is added to dampen oscillation, since the capacitor is part of a large tank circuit whose inductances are created by wiring and magnetics.

For safety, capacitors should be run to green-wire ground from all of the input and output wires. Shorting one side of the DC output directly to the green-wire ground is an effective way of keeping the noise from the external world, except that return-leg series regulators should not be shorted with this wiring scheme.

The optimum noise correction system (Fig. 5) meets external curcuit requirements and shunts a large amount of external noise current. A large, UL-approved, high-frequency capacitor and series resistor is placed between the AC neutral wire and green-wire ground.

Since a large capacitor from ground to AC neutral is used, another capacitor to the phase wire is, in effect, only paralleled to the neutral one. Also, since both wires of a pair are sufficiently high-frequency coupled, only one wire of a pair is needed for noise shorting.

The loop is closed to the DC output with a resistor that damps the oscillation through the system ground back through the DC output. Grounding the box to TSR ground and system ground by-passes the high green-wire ground impedance and raises the noise level considerably.

DIODE NOISE

Another source of noise common to most power supplies is diode reverse-recovery noise. Because diode current does not shut off exactly as the diode voltage crosses zero, it takes a little reverse current to clear out the carriers. Depending on the types of diodes used, this reverse-recovery current comes in different amounts and different turn-off speeds result when the carriers are cleared.

Fast-recovery diodes do not allow the reverse current to reach very large levels and soft-recovery diodes shut off slowly at the end of recovery. Hard-recovery diodes shut off very rapidly, creating a current step function that causes adjacent circuitry to ring. So the choice is for both fast- and soft-recovery diodes.

Finally, circuit analysis of electric noise paths and currents can never be total or complete since the impedance of noise paths are extremely complex. The engineer must rely strongly on past experience, developing a "feel" for impedances of open wires and interframe capacitances.

AR

ELECTROMAGNETIC COMPATIBILITY

EMC is the present term covering a wide range of undesirable elements of electronics including interference to radio reception, computer errors caused by noise and some of the effects of lightning.

EMI, electro-magnetic interference, is part of EMC. This term covers radiated noise and is usually measured in terms of volts per metre of ampere-turns per metre. If the noise is broad-band, it is measured in complex terms such as dB/μV/m/MHz (decibels above one microvolt per metre per megahertz).

RFI, radio frequency interference, is the outdated term for EMI.

PLT, power line transients, is one kind of conducted noise generally caused by switching inductive loads and is measured on the power line.

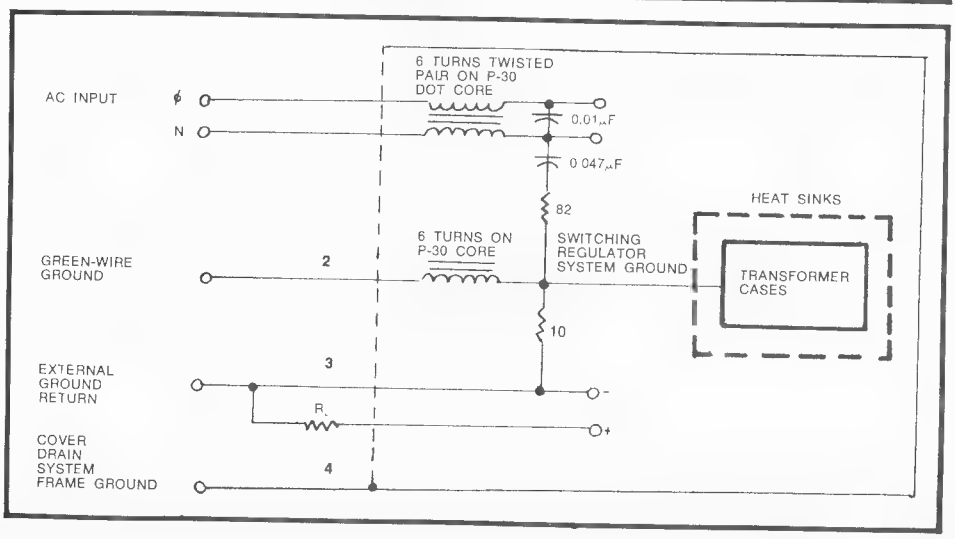

Figure 5. This optimum noise-correction system meets external circuit requirements and can shunt a large amount of noise current from external circuitry. The ferrite cores add even more protection by increasing noise path impedances.

AWARDS

Mike Bazley VK6HD
FEDERAL AWARDS MANAGER
8 James Road, Kalamunda, 6076

DXCC News

HK0, Serrana Bank, HK0, Baja Neuvo and 8Z4, Neutral Zone have been deleted from the ARRL Countries List. The total number of current countries now stands at 315.

DXCC LISTS AND NETS

In an earlier issue of this column, I reported on the proposal of WB4ZNH to have the ARRL DXCC Rules altered so as to make list operations unethical. The September issue of QST (pages 44 & 45) details the pros and cons of DX lists.

Whatever you may think of lists and nets you cannot get away from the fact that they exist and look as if they are here to stay. It seems to this writer that basically the controversy centres around one point and that is the definition of QSO. The supporter of lists believe the important part of a QSO is the report (usually his call sign has been passed to the DX station by the net control). The chaser of DX, through the "pile up", has to get his call copied by the DX station (he knows his report is going to be 5 & 9!!)

On marginal QSOs I would suggest it is harder for a call sign to be copied than a report. Further, as the report does not really matter for DXCC (any report is accepted, 1 & 1 or 5 & 0, as long as a two way exchange takes place), why is it considered so important?

The foregoing may suggest that I am against lists and nets. Nothing could be further from the truth. My concern is, that in a particular area of amateur achievement, DXCC awards, we have a division of opinion and unfortunately this division is getting wider.

A possible solution to the problem could be that "check ins" to nets are given a number by net control. When all "check ins" have been completed the net control announces the DX on frequency and then invites stations by number to make their call. This procedure means that a net station has to get his call and the report across plus receiving the DX station's report. This could result in a stronger QSO than that made via a DX "pile up". Further the advantages of DX net working are still retained: the low power or poor equipment station will still be able to compete with the big guns.

DXCC AGAIN

It is interesting to note how emotive people are in any discussion of the DXCC Award programme. Since I last penned a few words on "why count rocks or buildings as countries", I have had quite a mail bag.

Opinions have ranged from, "Let's scrap DXCC altogether" to "we should tell the ARRL how to run a **proper** DXCC programme". Strong stuff this, but we should at least try to get some of these problems in their true perspective. The ARRL is perfectly entitled to lay down whatever conditions they wish for their DXCC, it is their award. The fact that they allow overseas stations to participate in their award programme is a plus for us.

At present our DXCC award policy is that we try to follow the ARRL DXCC guidelines as closely as possible. If we VKs do not like some of their country definitions and rules we have several solutions available to us. We can opt out altogether; accept their rules; start our own DXCC award with our rules or keep DXCC and have an alternative DX award.

SOUTH AUSTRALIAN RADIOTELETYPE GROUP (SARG) AWARD

RULES:

1. *GENERAL AWARD — Overseas and Interstate operators need to work ten different SARG members using 2 way RTTY. VK5 stations need to work fifteen instead of ten as mentioned above.*
2. *CROSS MODE AWARD — Available only to those whose licence does not permit RTTY transmissions. Such must copy in RTTY and transmit on SSB or CW. The number of stations required etc. is the same as for the General Award.*
3. *VHF/UHF AWARD — Operators must work ten different stations using 2 way VHF/UHF RTTY and not less than three of these must be SARG members and all qualifying contacts must be more than 50kms distant.*

In addition to the above, from time to time, Special Awards will sometimes be issued for certain special occasions.

Applications for these awards are to be sent to the Group's official address enclosing a payment sufficient to cover printing and postage costs. Further details can be obtained from Bruce VK5XI QTHR.

FIVE BAND WAP

As part of NZART activities for WCY 1983, a Five Band WAP will be made available.
REQUIRED: QSO 30 eligible Pacific Countries (as count for Oceania for WAC), each on five different bands making a total of 150.
ACTION: Send list of log extracts (QSLs not required to be held) to NZART Awards Manager, 152 Lytton Road, Gisborne, New Zealand with $6.
REWARD: Wooden Shield surmounted with NZART badge and appropriately inscribed.
** Extra postage if airmail required overseas. $3.

AWARDS ISSUED

Awards issued and amendments received up to 6th November 1982 are listed below.

WAVKCA AWARD

CALLSIGN	CERT. NO.	CALLSIGN	CERT. NO
K1KTB	1054	JA1KAW	1074
I4BAC	1055	JH4OQF	1075
VK6OE	1056	UB5WBG	1076
JF1VST	1057	UA9CBO	1077
JH4UVU	1058	UA0CBW	1078
JA1PUK	1059	UQ2MU	1079
G3LDI	1060	UK9OAW	1080
W1BWS	1061	UK3SAB	1081
JA9NLS	1062	UW9VD	1082
N4AH	1063	UA0CDT	1083
JH1KRC	1064	UK3R	1084
JF3GKE	1065	UA0AG	1085
EI1DH	1066	UW3UO	1086
JA6CM	1067	UI8ADQ	1087
JG1NNC	1068	UA0LFK	1088
P29NSF	1069	UK1NAD	1089
JF2PZH	1070	KA1JC	1090
JA2JRG	1071	VK2NHV	1091
JA1WPX	1072		
Y37XJ	1073		

HAVKCA (SWL) AWARD

CERT NO	CALLSIGN
64	L50013 Richard Cybul
65	UA3-142-1256
66	UA3-168-74

WAS (VHF) AWARD

CERT NO.	CALLSIGN	CERT. NO.	CALLSIGN
147	VK4SH	150	JA6LLA
148	JF1IRW	151	JH1WHS
149	JG3FEV		

DXCC NEW MEMBERS

PHONE

CALLSIGN	CERT. NO	TALLY
VK6YF	296	121
VK7AN	297	122/121
VK3NAJ	298	101/100
VK3KHI	299	100
VK3PGT	300	100
VK5FF	301	110
VK2VBL	302	176
OPEN		
VK3NNH	210	106
VK3VGD	211	216/217

DXCC AMENDMENTS

PHONE

CALLSIGN	TALLY	CALLSIGN	TALLY
VK2AHH	278/301	VK4AK	301/310
VK2DPN	225	VK4BG	274/284
VK3BRM	269/270	VK6HD	305/314
VK3DU	282/284	VK6LK	310/324
VK3GB	229/247	VK9NYG	142
VK3VGD	216/217		

CW

VK5ARA	126	VK6HD	268/279

OPEN

VK2AHH	285/311	VK4BG	281/294
VK4AK	301/311	VK5ARA	217

AR

The Tenth Anniversary

NORTH QUEENSLAND CONVENTION

will be hosted by the Townsville Amateur Radio Club at Townsville, 24/25 September, 1983.

Come and join us in the birthday celebrations.

Further details from: TARC, P.O. Box 964, Townsville, Q, 4810.

AUSTRALIAN LADIES AMATEUR ASSOCIATION

ALARA

Margaret Loft VK3DML

28 Lawrence Street, Castlemaine, Vic. 3450

A very happy New Year to you all, may all your hopes and dreams for the year ahead be realised.

Nice to meet so many YLs at the Ballarat Convention, Mavis VK3KS; Brenda VK3KT, Brenda VK3QT; Vicki VK3??, Dale VK3PEH, Maggie VK3NQQ, Joan VK3NLO. The weather was a bit miserable but the hospitality more than compensated. So thanks to all the organisers for a very enjoyable weekend. Dale, hope you enjoyed the contents of the competition.

Well our second contest is over and as you read this I hope to be "knee deep" in logs; thank you all for participating and hope you enjoyed it. Full details in March of contest results.

Remember the ALARA net is at 0930 UTC until 6 March, on 3.570 ± MHz.

As promised a list of ALARA members with their date of joining.

Until next month 73/33/88 to all.

Margaret VK3DML

ALARA MEMBERS

VK1NEJ	21-2-82	WE	29-10-76	WP	31-1-79	P29NSF	2-10-80
VK2AHD	10-11-80	VAN	20-2-81	YF	3-7 78		
DIX	22-7-81	VBK	17-3-79	YL	15-9-76	NWN	23-3-81
DJO	20-8-75	VON	2-3-80	JW	21-12-78	NYL	26-4-79
DLT	22-7-80	YL	5-4-76			OK	23-9-78
DQG	20-3 82			VK7HD	29-12-77		
DVL	11-8-79	VK4ABM	14 7-79	JM	23-1-81	ZS5DC	1-6-80
HD	22-10-76	ACJ	22-7-80			6GH	1-6-78
KDX	14-7-79	AOE	10-10-80	VK9NL	1-6-80		
MI	5-11-76	AWE	17-9-79			K1IJV	23-3-81
MR	4-11-76	BSQ	22-3-82	ZL1AJL	18-8 76	K6INK	9-6-79
NKN	6-8-81	NAM	21-5-76	ALE	12-12-79	KB8RT	2-10-80
NQI	14-7-79	NDG	12-1-81	ALK	1-11-81	KF7F	1-6-78
NYL	9-3-81	NNJ	21-8-79	BDZ	18-3-77	N5CFP	1-10-80
NZW	9-3-81	AWL	2-3-80	BOR	11-5-80	W2GLB/5	1-10-79
PAW	1-10-80			OC	1- -79	W3RXJ	1-11-78
PLG	15-1-81	VK4NME	5-9-82			W3CDQ	1-11-78
SW	26-7-80	NXK	12-6-81	ZL2AZY	11-1 81	W4KJE	1-10-80
KJV	25-1-80	VAX	6-1-81	BAO	1-11-81	WA1WVJ	10-12-79
VLV	17-9-79	VDJ	1-10-80	QY	24-4-76	WA3HWP	6-10-81
YQK	20-3-82	VIT	28-2-82	THW	1976	WA4SRD	17-10-79
		VKT	7-10-81			WA0WOF	24-4-81
VK3AGO	6-5-79	ZN		DF2SL	1-9-79	WB2YBA	1-6-78
AYL	1976	PZ	9-3-81	DT1TE	1-9-79	WB3CQN	20-3-78
AZW	9-8-76	ATK	1-9-82	DJ9EK	1-11-81	WB7QOM/	
BBJ	9-6-79			DK5TT	1-11-81	KQ7Y	1-10-80
BIR	23-8-75	VK5ANW	21-4-76			KA7CRO	2-3-82
BJB	2-8-76	BJH	30-3-80	G3HCQ	20-5-81	WB0SXN	14-7-79
BRE	1-9-76	LM	4-4-76	G4EYL	28-3-81		
BTU	1-9-77	NKM	1-9-78	G4KVR	1-11-81	VE6AUP	1-10-80
DML	8-6-77	NBV	5-6-79	G4EZI	29-9-78	7BIP	1-10-79
DMS	24-10-77	ZN		G4KFP		CBK	28-10-78
DVT	24-10-81	QO	12-2-81			CIX	28-5-78
DYL	20-4-81	YJ	14-7-79	GM4KMQ	12-8-81	DKC	6-78
HQ	3-10-76	YL	20-4-76	GM4LWS	20-12-80	3HGA	27-8-78
KS	22-8-75	YW	23-7-76				
NLO	19-10-81	NNW	30-7-76	JH1WWS/3	1-9-82	XY1DV	30-1-82
NMM	11-11-76			JH3XWY/2	9-3-81		
NQQ	19-2-79	VK6KYL	2-3-79			5Z4CM	20-2-82
PCI	2-3-82	NYL	2 3-80	PA3ADR	12-6-81		
		QM	21-6-80	PA0HIL	12-6-81		

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MENTION

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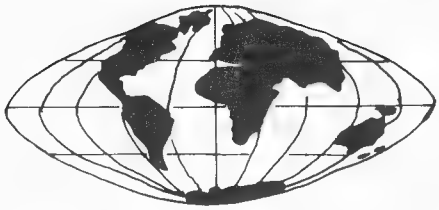
ADVERTISERS

THE RADIOCOMMUNICATIONS BILL

Recent Government sources indicate that the BILL will not now be introduced into Parliament until the Davidson Report has been fully considered.

The Davidson Report, which is the comments and recommendations of the Davidson Committee who have been reviewing the operations of Telecom, is open for a three month comment period.

AR.



VHF UHF - an expanding world

Eric Jamieson VK5LP
1 Quinns Rd, Forreston, SA 5233.

AMATEUR BAND BEACONS

Freq.	Call Sign	Location
50.005	H44HIR	Honiara
50.008	JA2IGY	Mie
50.098	KH6EQI	Pearl Harbour
51.022	ZL1UHF	Auckland
52.013	P29SIX	New Guinea
52.100	VK0AP	Macquarie Island*
52.150	VK5KK	Arthurton
52.200	VK8VF	Darwin
52.250	ZL2VHP	Palmerston North
52.300	VK6RTV	Perth
52.320	VK6RTT	Carnarvon
52.330	VK3RGG	Geelong
52.350	VK6RTU	Kalgoorlie
52.370	VK7RST	Hobart
52.400	VK7RNT	Launceston
52.420	VK2WI	Sydney
52.425	VK2RGB	Gunnedah
52.435	VK3RMV	Hamilton
52.440	VK4RTL	Townsville
52.500	VK2BNT	Newcastle ★
52.510	ZL2MHF	Mt. Climie
53.000	VK5VF	Mt. Lofty
144.400	VK4RTT	Mt. Mowbullan
144.420	VK2WI	Sydney
144.430	VK3RTG	No advice of site
144.465	VK6RTW	Albany [3]
144.475	VK1RTA	Canberra
144.480	VK8VF	Darwin
144.550	VK5RSE	Mt. Gambier
144.600	VK6RTT	Carnarvon
144.800	VK5VF	Mt. Lofty
144.900	VK7RTX	Ulverstone
145.000	VK6RTV	Perth
147.400	VK2RCW	Sydney
432.410	VK6RTT	Carnarvon
432.440	VK4RBB	Brisbane
432.450	VK3RMB	Mt. Buninyong

Regarding the Albany beacons, Karl VK6XW has written to say the 2 metre beacon has been somewhat spasmodic in operation recently, but is generally on and operating from his QTH in Albany with 10 watts to a 6 element yagi pointing east. The 432 MHz beacon is not yet running, but the one on 6 metres is going.

Karl and others in Albany confirm the VK5VF beacon on 144.800 MHz is actually 4 kHz high in frequency and outside the range of some monitor receivers. Checking this, I find 3.7 kHz high, so until we can get the frequency correct listeners should note this difference.

WESTERN AUSTRALIA

Practically all the news this time comes from the West — is that where everything is happening? Graham VK6RO in Bunbury sends a copy of the Japan "CQ ham radio" containing a list of stations still working that country. All stations are either in the west or VK4, and include VK6OX, VK6ZDY, VK6ZLN, VK6KOJ, VK4RO, VK4AVV, VK4KDB, VK4ZYZ, VK4LE, VK8GB, plus the beacons VK4RTL, VK6RTT, VK8VF and P29SIX. Besides that, the JA's are still collecting a few exotic calls, like HL1QY, VS6EL, KG6JDX, KC6SZ, DU1MRC and YB1BZ!

Graham also enclosed a snippet from R A Ham in Sussex, England, who advised "the authorities have given the OK for UK amateurs to use 6 metres outside of TV hours; no good for DX, but a step in the right direction." It's certainly a start, but whilst it may be outside regular DX hours, 6 metres is so unpredictable it may still be that from time to time some useful contacts will result providing the operators are there!

Peter, VK6ZDY has also written from Gooseberry Hill (is that an elevated site?) to say most 6 metre openings are occurring north of Perth, with the MUF hovering just below 50 MHz much of the time, and allowing the JA stations to continue with their contacts to many other areas. Also, from his observations in the 49 to 50 MHz area, there are at least 3 UA TV transmitters, one from Vladivostok, one central UA, and one western UA on a bearing of 310°, which usually comes in late afternoon. The signals on 49.750 can reach tremendous strength for long periods of time, at others propogation is much like ionospheric scatter and meteor pings hovering on the noise level. Times are from 2330 UTC through to 1430 UTC at night.

The following has been heard or worked from Gooseberry Hill: 21/9: 0829 UTC weak JA on 50 MHz, 49.750 very strong 27/9: UA TV strong; 17/10: 0325 UTC JA on 50, JA to ZL. Then at 0333 UTC JG1, JR1, JE3, JR0, JR7 all on 50 MHz to 0611 UTC. JA's worked FY7, VS6, plus VK4, 5 and 6 on 52 MHz. Peter reported signals were weak at first then S9 + on 50 MHz, with a JA dogpile on 50.101 working VS6, 18/10: 0404 UTC JA on 50. 0430 UTC JA to VK2 and 4 19/10: 0441 UTC JA on 50 again, JA9, JA1. Dogpile trying to work DU1WEN! JA on 50 right through to 0715 UTC. At 2230 - 2330 UTC JA working to Europe (ZB2) via long path, also open to South America same time to LU, T32AB etc.

20/10: 2400 UTC weak UA TV. 24/10: 0430 UTC weak JA's on 50 MHz; 29/10: 0900 UTC eastern UA TV S9. 30 and 31/10: weak UA TV 0125 UTC; at 0916 UTC western UA TV 5x7 bearing 310°, VK6WD and VK6HK heard TV carrier 5x3 on 48.250 (possibly Europe, BBC?); 1/11: 2338 UTC first CH0 from Wagga since last Christmas. 3/11: 1214 UTC UA TV strong, JA on 50. 1225 UTC JA1 and 2. 1256 UTC TV from Europe on 48.250, no modulation. JA's same morning working into South America, also KD6, KG6, ZL, and advised eastern Australia worked into USA (Strange we have to hear that news from the Japanese, never locally it seems . . . 5LP). Peter says nothing heard from Pacific area so far.

4/11: 2354 UTC JA1 and 2 on 50. 2400 UTC large JA dogpile working South America again. 0458 UTC JR3SQZ said CX and LU worked by them. Band open all day around 49 and 50 MHz with much strong UA TV, again on 5/11 and 6/11!

Peter is still looking for answers to his requests for skeds on meteor scatter and scatter on 6 metres, he's waiting to hear from the multitudes! Peter also says we have a bit of thinking to do should we get 50 to 50.150 (1) What should be the calling frequency, 50.050, 50.100, 50.110, 52.050 or what? In the US the DX calling frequency is 50.110, with local and Es calling frequency 50.200. (2) During November, December Es period do we all crowd down to 50 MHz with resultant TVI in Channel 0 areas? Food for thought. Thanks for writing Peter.

On point 2 above, there seems little reason for a mad race by everyone to go down to 50 MHz for Es contacts. It would seem a pity to crowd out any possible 50 MHz contacts by everyone being there with S9+ signals, it is unlikely we would work Pacific and other areas DX with any certainty during Es periods, most of this has been done during the equinox periods, although there have been exceptions.

Not every 6 metre operator is set up to work long distance weak stations, one would generally hope that Es would continue on 52 MHz (or else we might lose this portion of the band anyway) and monitoring be done on 50 MHz so that should signals appear there they could be worked. Thus it seems sensible to consider 50.050 as a DX call frequency and 52.050 as at the moment for VK contacts, with the changing of the band switch to go from one band to the other without retuning. On the other hand, you might consider that W stations are not permitted phone below 50.100, that area being reserved for CW and other call areas. So there will need to be some thinking in regard to a band plan for any such changed circumstances. HOW ABOUT A BIT OF FEEDBACK ON YOUR IDEAS PLEASE?

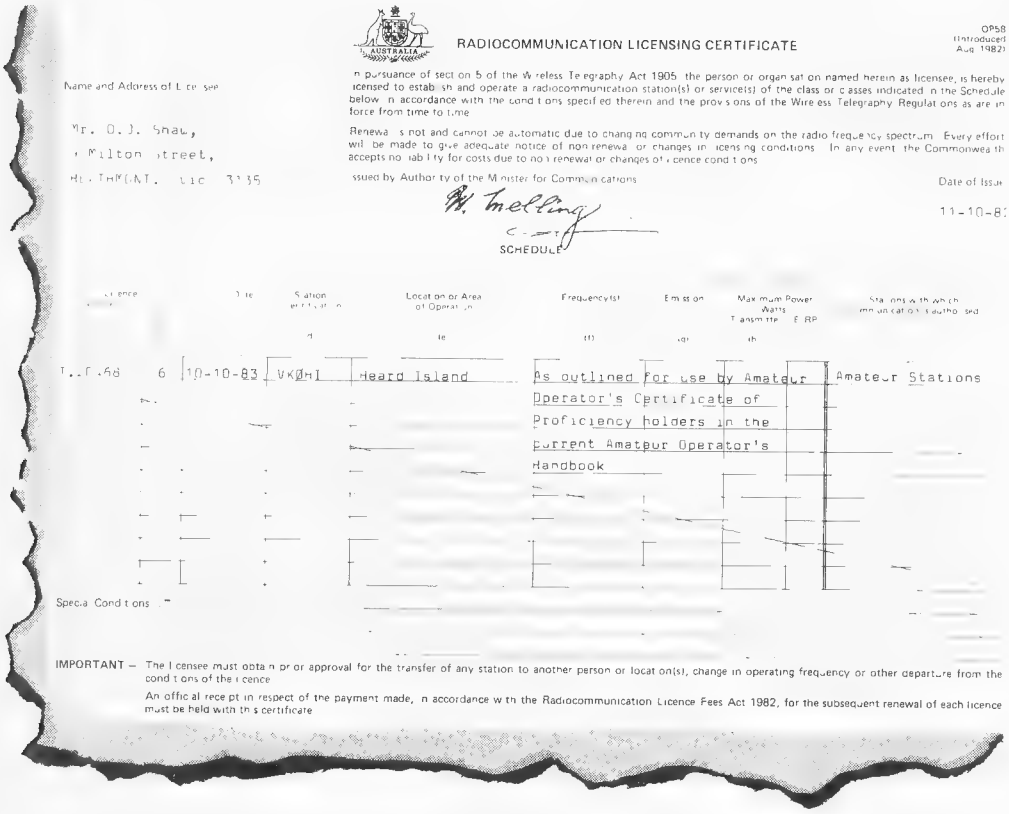
FROM CAIRNS

John VK4TL has written to say that JA paging beacons between 146.760 and 146.810 were heard on 27/9/82. They started coming in at 2051 at S1, with VK4KT in Townsville hearing them S4. They were also heard on 26/9 by VK4AFC and VK4AVV, and again on 28/9.

John also advises VK4AFC has had a two-way SSB contact on 1296.1 MHz with VK4KT, and on 31/10 VK4AFC, VK4TL and VK4RR had a QSO with Tom VK2DDG on 147 MHz SSB! That's a long haul from Cairns to Byron Bay. 144.1 was tried without success, this frequency being too low for propagation at the time. Good work chaps!

FROM SOUTH AUSTRALIA

Not a lot to report other than the few usual JA openings, both on 50 and 52 MHz. However, a fairly stationary high in the Great Australian Bight did produce some interesting conditions on the late afternoon and night of 9/11, between Adelaide and Albany. Contacts resulted on 144 and 432 MHz with signals up to 5x9. Those involved included VK6KJ, VK6BE, VK6WG, VK6XY, from Albany, and VK6BQ from Denmark. At this end were VK5ZRO, VK5ZDR, VK5AIM, VK5RO, VK5LP, VK5ZTS, VK5ZUC — there were probably others but I cannot always hear them when they have their beams side on while pointing at VK6. We were also pleased to have a contact with Mal VK5KMW at Ceduna on 144.100 SSB. This is not an easy path, and I personally was most happy to have a contact from behind my big hill! Attempts were also made to contact Mal on 52.060 — some of us could hear him but he couldn't hear us, so it was pretty much a cross-



RADIOCOMMUNICATION LICENSING CERTIFICATE

OP58
(Introduced Aug 1982)

Name and Address of Licensee

Mr. O.J. Shaw,
Milton Street,
MT. THOMNT. Vic 3135

In pursuance of section 5 of the Wireless Telegraphy Act 1905 the person or organisation named herein as licensee, is hereby licensed to establish and operate a radiocommunication station(s) or service(s) of the class or classes indicated in the Schedule below in accordance with the conditions specified therein and the provisions of the Wireless Telegraphy Regulations as are in force from time to time

Renewals not and cannot be automatic due to changing community demands on the radio frequency spectrum. Every effort will be made to give adequate notice of non renewal or changes in licensing conditions. In any event the Commonwealth accepts no liability for costs due to non renewal or changes of licence conditions

Issued by Authority of the Minister for Communications

Date of Issue

11-10-82

SCHEDULE

Licence	Date	Station or Installation	Location or Area of Operation	Frequency(s)	Emission	Maximum Power Watts Transmitter E.R.P.	Stations with which communication is authorised
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)
T..C.68	6	10-10-83	VK0HI	Heard Island	As outlined for use by Amateur Operator's Certificate of Proficiency holders in the current Amateur Operator's Handbook		Amateur Stations

Special Conditions

IMPORTANT — The licensee must obtain prior approval for the transfer of any station to another person or location(s), change in operating frequency or other departure from the conditions of the licence

An official receipt in respect of the payment made, in accordance with the Radiocommunication Licence Fees Act 1982, for the subsequent renewal of each licence must be held with this certificate

band affair. Incidentally, in a recent listing of 432 operators I did omit Steve VK4AIM who is very keen.

VK0HI ON SIX

Due to the forethought and dedication of a small group of VHF operators every endeavour has been made to allow VK0HI to be heard on six metres. This Australian territory, will if conditions favour the group, become a first for many operators.

Original planning and allocation of loaned equipment for VK0HI had to be rehashed due to the opportunity of putting Peter, VK0AP on Macquarie Island with adequate equipment for six metre transmissions.

Another keyer had to be manufactured, this was done by Gil VK3AUI and his merry band of helpers which included Kevin VK3AUQ, Lionel VK3NM and Ken VK3GJ.

Dave VK3DHF, the leader of the Radio Expedition and licencee of VK0HI volunteered to take his TS660 and the keyer was subsequently tailored to suit. A LUNAR amplifier has been kindly lent to assist the cause by Gil, VK3AUI, for the period of the expedition. The "listening and talking" part was taken care of, the next step an antenna. WERNER WULF VK3BWW, had no hesitation in agreeing to custom manufacture a five element yagi to loan the group when approached. Now all is needed is the luck and propagation to allow Dave to start filling the log with some VHF contacts.

Operating habits of the keyer are as follows: CQ call followed by Rx 6, followed by a listening period — the keyer then sends another CQ followed by Rx 10 and a listening break.

During the listening break, the keyer listens on either the six metre or the ten metre liaison frequency.

FREQUENCIES:

Six metres 52.008 MHz

Ten metres 28.885 MHz

Good luck to all VHF operators in their quest for this new one.

As it is only two weeks since the last notes were sent in there isn't as much as usual to tell. However, I hope Christmas and New Year went off well for all of you, and those wanting new transceivers found them in their Christmas stockings. Closing with the thought for the month: "Time has no diversions to mark its passage; there is never a thunderstorm to announce the beginning of a new year. It is only we mortals who ring bells and fire off pistols." 73. The Voice in the Hills.

AR.

EDUCATION NOTES

Brenda Edmonds VK3KT
FEDERAL EDUCATION OFFICER
56 Baden Powell Drive, Frankston Vic 3199

World Communication Year is being publicised elsewhere, but I would like to add a few comments for those who feel they are not likely to be affected or involved.

It has been said many times that for people whose hobby is communication, we are generally very bad communicators. We are very ready to criticise or complain among ourselves, but not so keen to make an effort to get a message across clearly in the right direction.

How many times have you tried to explain some technical point, and ended up floundering or leaving the listener more confused than ever?

Many of us are at times called on to try to explain amateur radio to a non-technical audience. Here is a chance to do something for the hobby, for other amateurs, and incidentally for World Communication.

Although most people are generally less ignorant about radio than they were a few years ago, there are still many people to whom it is no more than a mysterious black box that makes noises.

Here are a few of the questions I have been asked by staff as well as students, during the time I have been running a school station.

Why do you need an antenna?
Why can't you listen to the police on it?
Why is it so noisy (static)?
Why do you have to have a licence to use it?
How is it different from CB?
Can you call up my Auntie in Bendigo (London, Brussels)?
Why can't we understand what they're saying? (tuning off a sideband signal)
Will — (the one we talked to last time) be there again today?
How many channels has it got?

Unless we meet these questions, occasionally, we tend to forget that many people do not know the answers. If you can produce spontaneous, clear, simple answers to questions such as these, you may be able to claim credit for introducing new enthusiasts to our ranks.

Talking of questions — I hope to have a new Trial AOCP Theory exam ready early in January for those planning to sit in February. Let me know if I can help you in any way.

73 Brenda VK3KT

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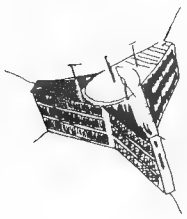


AMSAT AUSTRALIA

Chas. Robinson VK3ACR
338 Dorset Road, Boronia 3155

CO-ORDINATOR
Chas. Robinson VK3ACR
CORRESPONDENCE
VK2RX, VK3YQX, VK5HI, VK5AGR, VK7PF
INFORMATION NETS
AMSAT AUSTRALIA
Control: VK3ACR
1000UTC Sunday on 7.064 MHz
AMSAT PACIFIC
Control: JA1ANG
1100UTC Sunday, 14.305 MHz
AMSAT SW PACIFIC
Control: W6CG
2200UTC, Saturday 28.880 MHz
ACKNOWLEDGEMENTS
ASR (AMSAT Report)

STATUS OF SATELLITES

OSCAR 7 — There have been reports that this satellite is still buoyant. From time to time AMSAT state that they have received quite a number of reports from amateurs that this satellite has been heard, but confirming these reports is difficult. However, while these reports continue to come in reference orbits will be given on the NETS.

OSCAR 8 — Is performing normally, the battery count is stable and the base plate temperature is well in tolerance.

UOSAT 9 — Is back to normal after the six months rest, and credit must be given to STANFORD RESEARCH INSTITUTE for their terrific effort in commanding on the on-board receivers.

RS Series — These satellites are very stable and this could be due to their high altitude, having less earth gravity pull than those orbiting at a much lower level.

The KEPLERIAN ELEMENTS for the above satellites are read each Sunday night on the AMSAT AUSTRALIAN NET for those amateurs who prefer to calculate their own reference orbits or are interested in the variations of parameters.

As this is the beginning of another year, I thought it an opportunity to summarize the happenings of 1982.

In this last year we have had the good news and the bad, but when looking back we see many interesting phenomena. In the beginning of the year we heard of the very successful multiple launch of the Soviet's six RS satellites, RS 3 & 4 which transmit telemetry only, RS 5 & 7 with their unique robot and codestore capabilities and RS 6 & 8 with transponders.

At this time we also had UOSAT 9, an English satellite made possible by the University of Surrey, and although not having communication facilities, proved to be a very highly scientific and experimental satellite that is capable of transmitting telemetry on ASCII at a number of Baud rates, RTTY, CW, Synthesized voice, Data Beacon and Engineering Beacon as well as micro computers, Magnatometer and also including a CCD Camera.

On March 5th OSCAR 8 had its fourth birthday and the way that it is performing one would feel that this bird has quite a lot of life left. We hope so anyway, as Mode "J" is still a challenge to the dedicated satellite operators.

In April 1982 it was a shock to find that UOSAT 9 was not performing as it should. Telemetry was missing and in place was a single tone. We later learned that both the 2m and 70cm beacons had accidentally been commanded on. This error de-sensed both command receivers so that they could not be ground controlled. On the 20th September 1982, the Stanford Research Institute (SRI) accomplished a dramatic success, and after six months restored UOSAT 9 back to normal by the use of their 150 ft dish, a lot of man hours and perseverance and 12 megawatts of ERP.

May 17th 1982, an amateur Soviet satellite ISKRA 2 was manually expelled from the airlock of the manned Russian space mission SALYUT 7. This satellite, although a short lived one, never fulfilled its primary objective of providing a 21 to 29 MHz linear transponder. However, the beacon of ISKRA 2 signing RKO 2 was prominent in the 10m band throughout its short life. It fell from orbit on the 9th July 1982 just north-west of the Canary Islands. The main feature of this satellite was the unique method of its launch.

One of the unfortunate happenings of the year was the failure of the L5 the fifth launch of the ARIANE Rocket which occurred on the 10th September 1982. You may remember LO3 was the fated rocket that plunged into the sea with Phase IIIA aboard. This means that out of the five ARIANE launches two have been unsuccessful. It has now been confirmed by the European Space Agency that Phase IIIB, our next satellite to be launched, has been rescheduled from L7 to L6, which is expected to take place late April this year 1983.

Also at this stage it may be interesting to note that Phase IIIC is 80 per cent complete, and according to reports there is a possibility of a launch in approximately two years that AMSAT has been watching for some time.

AMSAT has submitted a proposal to the US Airforce for a high altitude launch for Phase IIIB. AMSAT are waiting a response.

TELEMETRY REPORTS HEALTHY UOSAT

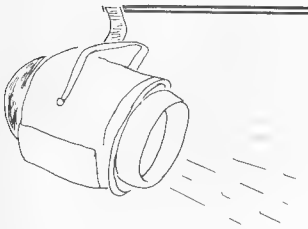
Stations around the world got back to the fun of watching UOSAT as the amateur scientific satellite renewed its promise of new vistas in amateur science and education. Sending its "medical chart" via its 2 metre telemetry beacon, UO-9 appeared in good health. Programme Manager at Surrey, Dr. Martin Sweeting, G3YJO, said last week that all of the parameters appeared favorable with the possible exception of the radiation experiment EHT voltage (channel 13) which had been a bit lower than had been expected. The plan is to run the UO-9 for a few days with the CCD imaging memory on to detect any possible effects of radiation exposure as has been predicted for the long term. Damage from various radiation sources is a major source of concern in the design of satellites. Phase IIIB, for example, will be subject to doses of radiation in the van Allen belts which would be lethal to a human many times over. The UOSAT is expected to not be exposed to heavy radiation exposure except for an occasional solar outburst when particle influx over the poles increases dramatically. The memories abroad UOSAT are generally thought to be the most susceptible to radiation damage so they provide a relative index to the general health of the entire spacecraft.

Soon the stabilization regime will recommence from where it left off abruptly last April. Earlier it had been reported that the gravity gradient boom had been partially deployed last April but current telemetry indicates that the tip mass has not been uncaged (telemetry status point 29 = 0) yet. It is not clear if the 2.5 kg tip mass can be recaged or if earlier reports were in error. Nevertheless plans are proceeding on all fronts to make maximum use of the year to two years remaining in the useful life of UOSAT-OSCAR 9.

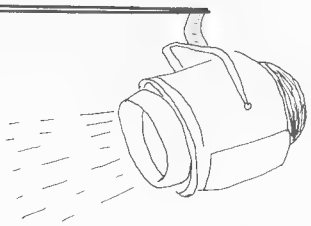
In related developments AMSAT UK Secretary Ron Broadbent, G3AAJ, appearing on the Radio Netherlands radio broadcast "Media Network", indicates that he expects UOSAT to exercise the balance of its on-board experiments soon. Although the CCD camera has been on briefly and has revealed a very rough image on its first shot, this experiment is the one which seems to have the widest general appeal despite its dubious scientific merit. On the other hand, the HF beacons (7.05, 14.002, 21.002 and 29.510 MHz) have notable amateur scentific appeal while failing to stir the imagination of most hard-boiled, showme, amateurs. With UO-9 back on track and prospects brighter than ever for a meaningful regime of experiments, G3AAJ and crew are expected to once again trot out the CCD camera demodulator and display boards for use by amateurs. Placed between one's VHF or UHF receiver and one's commercial TV appliance, we are told these clever little devices will display the UO-9 CCD imagery when it is activated. The CCD camera can be activated after the stabilization is complete. Also, once the boom is fully deployed the HF beacons can be activated since they use the 50 foot (16 metre) structure as a linear antenna.

John Beanland, G3BVU/W3 and Ian Ashley, ZL1AOX both report that UOSAT forms the theme of the August/September issue of the British engineering "Journal of the Institute of Electrical and Radio Engineers (IERE)". Papers by the experimenters including G3YJO, LUHBG/W3 et al appear.

AR



SPOTLIGHT ON SWLing



Robin Harwood VK7RH

5 Helen St, Launceston, Tas. 7250

WCY

This year of 1983 has been designated by the United Nations as the International Year of Communications, called World Communications Year (WCY). Previously, we have seen Years of the Tree, the Child, and the Disabled Person. There will be special events held to celebrate this, throughout the world during the twelve months. I am sure that further details will be included in "AR" over the next few months. I know that several international broadcasters are planning special competitions in conjunction with WCY '83.

Well, what will happen as far as listening goes in 1983? It is hard normally to predict what will happen, as far as propagation goes, from day to day. Yet various trends point to an increased usage of the HF spectrum, despite many services opting for satellite and tropospheric scatter techniques, yet other users quickly utilise any vacant channels on HF. Many also have SW frequencies as a back-up, for satellites have been known to fail. Many developing nations still prefer HF communications, as it is economically more feasible to their budgets.

OTHR

We will continue to be plagued by interference from "Over The Horizon" Radar Systems on shortwave. As you are possibly aware, recently the United States commenced operating a 1,380 kW sender in Maine, to watch the North Atlantic. This FM/ICW sender is reportedly programmed to operate between 5 and 25 MHz, and on vacant frequencies (at least they are in America!). I believe that a second site on the American West Coast is contemplated for the Northern Pacific, as well as increasing the beam width on the existing site. With the USSR currently operating systems similar to this, from various sites within the Soviet Union, QRM from OTHR transmissions are bound to increase. Fortunately, they do have limitations as far as a radar system goes, but certainly have proved to be an effective disruption to telecommunications services.

DIGITAL MODES

There will be a swing towards the employment of digital modes of transmissions, now the technology and software are available. These enhance security and privacy factors, with times of occupancy per channel being measured in milliseconds, and will not be easily detectable on a normal receiver. Unfortunately, digital emissions are subject to dropouts, which can affect messages and their meanings, alleviated somewhat by repetition of the copy.

SOCIETY TODAY

Amateur Radio seems to be fragmenting further into little groups, such as DXers', technicians, computers', RTTY, novices and Old Timers', each drifting apart to their interests. We have to realise that we have one thing in common, a hobby and a friendship, as well as an organisation that can adequately represent their needs and aspirations with the appropriate authorities. As Society becomes more technology-oriented, so the complexity of problems arise from the abuse and use of it, which can cause difficulties for the individual wishing to pursue his recreational pursuits.

Recently the Tasmanian Division of the WIA launched a voluntary levy from amongst its members, to cover any contingency that might conceivably arise from the problems to amateurs from today's complex living standards. A veritable increase in electronic wizardry and gadgetry in the home has meant a host of problems to the amateur who wishes to utilise his transmitter. In many cases, expensive legal litigation can accrue from consumers'/neighbours' use of mass produced equipment, which in many instances is of inferior standard to that of the amateur equipment. This has happened in America. As well, a plethora of local building codes make it difficult to erect towers and/or masts in urban areas. Hence, there is a need for such a contingency fund to cover these situations likely to be faced by amateurs TODAY. I do not know if other divisions are contemplating Contingency Funds, yet I would urge the members to support them, for it is probable that more of these problems will surface during 1983. Elsewhere in this journal, you will find details of the Federal EMC Co-ordinator — Tony Tregale, VK3QQ, who has compiled an extensive background of AFI/RFI from transmission sources.

REJUVENATION

Recently, I resurrected an old Philips Model 2262 Receiver (circa 1939) from oblivion, hidden in the corner of my shack. With a friend's assistance, all old components were replaced, and dust removed. We were surprised by the performance of this forty year old receiver, especially its sensitivity and audio dynamic range, compared to today's sophisticated solid-state models. Its performance on MW was better than the Yaesu FRG-7 I mainly use. Of course the older receiver does have some drawbacks, primarily poor selectivity, but this is to be expected, as the spectrum is far more crowded than forty years ago. Neither does it have a Beat Frequency Oscillator (BFO). Yet, with the addition of a "Q" Multiplier stage, it would become a very good receiver.

RABBITS!!

On a recent "Waveguide" programme on the BBC World Service, the announcer referred to the problems of rabbits at the Daventry Site. It seems that Brer Rabbit has taken a fancy to gnawing at the plastic covering on the transmission cables! As the Daventry site covers quite an extensive area, just adjoining the M1 Motorway, the little bunnies have plenty of space to hop around and live. So be warned, keep your cables away from bunnies or any other creature, eager to gnaw away at the covering.

Incidentally if you are interested in listening to "Waveguide" from the BBC World Service, it can be heard at 0915 UTC Mondays on either 15.070, 21.550 or 25.650 MHz. Clayton Howard, the popular compere of HCJB's "DX Partyline" programme, has returned to Ecuador, after a twelve month sojourn in the States, and can be heard again with his session. It can be heard on Mondays and Saturdays at 0930 UTC on either 6.130, 9.745 or 11.925 MHz. As well, the European release at 2130 UTC can often be heard at 21.477.5 MHz.

Well, that is all for this month. I hope that I will be able to bring further developments from the World of Shortwave during the coming months. So until then, the best of 73's and good Dxing Robin.

AR.

QSP

JAs ON 20

A group of approximately five hundred Japanese operators who work facsimile regularly on Saturdays and Sundays on 14.245 MHz at 0000 UTC are looking for VK stations who would like to work JA on facsimile.

All seeking information about facsimile and the JA group should contact JA2IGS.

STRIKE GOLD — BY CALLING ALL SCOTTISH DISTRICTS

The Scottish Tourist Board is to encourage radio amateurs throughout the world to make contact with Scotland in a new scheme which was launched in Edinburgh on 25 November, 1982.

Under the scheme, entitled "WORKED ALL SCOTTISH DISTRICTS", certificates will be awarded to overseas radio amateurs who confirm two-way communications with amateurs located in Scottish districts. In addition, a special plaque will be awarded to the first station in each country and in each USA and Canada call area to qualify for having worked all fifty six Scottish districts. The award is open to all licensed amateurs.

Alan Devereaux, GM8VJV, Chairman of the Scottish Tourist Board, which is sponsoring the scheme, said in Edinburgh today, "We'd like to establish Scotland as a radio mecca for the half million radio amateurs throughout the world, and our new scheme will result in many thousands of contacts and enquiries from radio enthusiasts who want to visit Scotland."

Application forms and record books are obtainable from Mr A. G. Anderson, GM3BCL, West Balfour House, Durris, Banchory, Kincardineshire AB3 3BJ, Scotland, who will deal with all correspondence in connection with the scheme.

The award is in three classes:

Gold for all districts; Silver for forty five districts; Bronze for thirty districts.

Endorsements are available for all bands, single band and all mobile.

QSL cards must be in possession of applicants and applications certified by two general class licensees.

AR

All men are equal in eyes of radio enthusiast

Christine Salins
Townsville Daily Bulletin

Len VK4GD was recently awarded Life Membership of the Townsville Amateur Radio Club.

Phot by Townsville Daily Bulletin

It is almost 60 years since Len Dodds put his first radio together and he's been tinkering with amateur radio ever since.

Mr Dodds, 74, says he believes that one of the greatest attractions of amateur radio is the brotherhood it has created.

"You can talk to people all over the world, and it doesn't matter what sort of work you do, you've got something in common," he said.

"People using amateur radio in every country speak English—it's a universal language."

Mr Dodds recently spoke to a woman in Brussels. He has also made contact with people in Europe, Britain, America, South Africa and Japan.

"We talk about the equipment we're using, and about ourselves. After we've had a contact, we confirm it by sending what we call a QSL card."

Mr Dodds has a stack of cards from all over the world, confirming contacts and friendships struck up over the airwaves.

He was recently awarded a life membership of the Townsville Amateur Radio Club. He was delighted at the honour bestowed upon him.

"I'm very appreciative — they don't throw that around," he said.

Mr Dodds doesn't go to the club's meetings much any more, but he feels a close association with it, having been involved with it since it was founded

"In fact, I started the club with two other friends

"It was about 12 months after World War II and we had a room in the Queensland Insurance Building just opposite the old Burns Philp building.

"We rented the room for 10 bob a week until no one would put their money in and we had to get out. After that, we just used to go wherever we could."

Mr Dodds made his first receiver in 1923 after reading about radios in a magazine.

"It was only a crystal set but I went on from there. There weren't many books about radio then, but I learnt a bit more when I joined the Navy and went through signal school to become an operator," he said.

"In 1927, I was on a destroyer in Sydney and I took out an amateur radio licence there. In those days it was called an experimental licence and it cost me one pound."

Mr Dodds stayed with the Navy until 1938, making himself a portable set to carry on the ship.

He and his wife, Elsie, moved to Townsville during the war, when Mr Dodds joined the RAAF as an operator mechanic.

He had to cease his amateur radio activities during the war years — the only time he has ever been off the air since he started.

"Amateur radio was closed down during the war years. The PMG had to check to see if people had dismantled their equipment.

"It was then taken into the PMG and locked away. We got our licences back after the war."

Mr Dodds was discharged from the RAAF in November 1945, and joined the PMG not long after. He retired in 1973 and has since had a heart attack and lost the lower part of his left leg.

But nothing will stop him from doing what he loves most.

"Today I've got three sets and a monitor scope to check the output of my transmitter. I still mess around with the equipment — I can still see well and my hands are pretty steady, but things are a lot smaller these days," Mr Dodds said.

"The trouble with building things now is finding things to build them with. The Japanese have got the market these days. You can just walk into a shop and buy what you want.

"I enjoyed making my equipment myself. It's a greater achievement to speak to someone in America or somewhere, when you've put it together yourself."

Apart from reading Mr Dodds spends the best part of his days making contact over the airwaves.

"It's a good hobby which you can be involved in regardless of the weather," he said.

"It can be expensive but, if you do the work yourself, it doesn't have to cost much.

"It's my being. It's what I live for really."

Reprinted from: Townsville Daily Bulletin 23 August 1982

In order to fill out the Amateur Radio details of Len's long and varied career, I should state that Len received his first "experimental" licence in 1927 as OA2LD in Sydney. This was changed to VK2LD when the new Australian "VK" prefix was introduced in 1929.

His first Tx was a tuned plate / tuned grid circuit utilising a UV202 valve.

Len had to stop all Amateur activities during his RAAF service during World War II. When the war ended, Len settled in Townsville, and requested a Queensland callsign. He was allotted VK4GD, the call which he has retained to this day.

Peter VK4PV

AR

The old fashioned man who had a good head for figures now has a grandson who has an eye for them

★ ★ ★

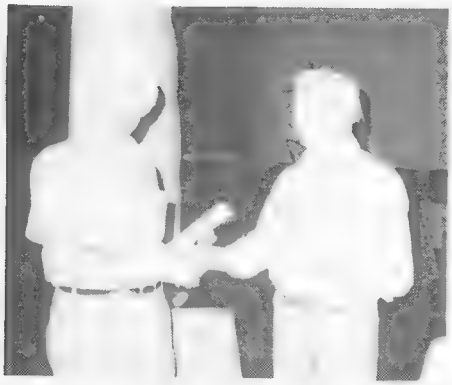
In the good old days a boy would give his girl his class ring and they were going steady. Nowadays he lets her use his hair curlers.

ARNS Bulletin Sept 1982

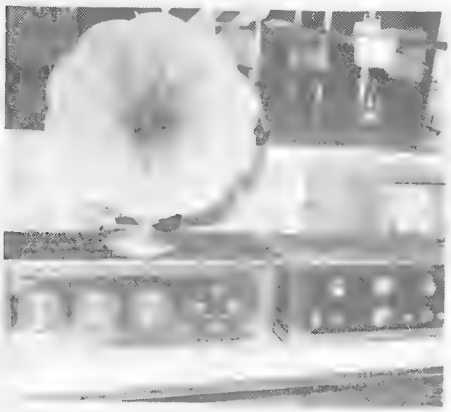
VK4 WIA NOTES

Budd Pounsett
33 Lasseter Street, Kedron 4031

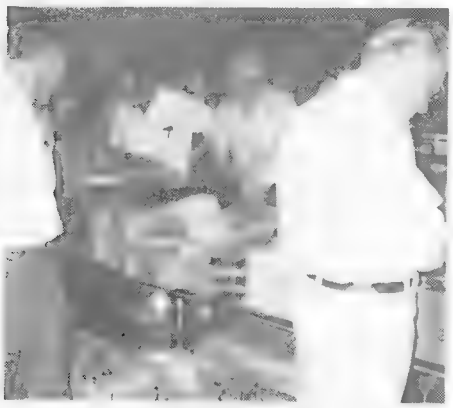
Scenes from the 1982 Gold Coast Hamfest and VK4 State Convention held at Broadbeach on 6th November 1982.



Geoff Adcock, VK4AG, receives an ARRL Handbook from Ken Ayres, VK4KD, for winning the VHF Fox Hunt.



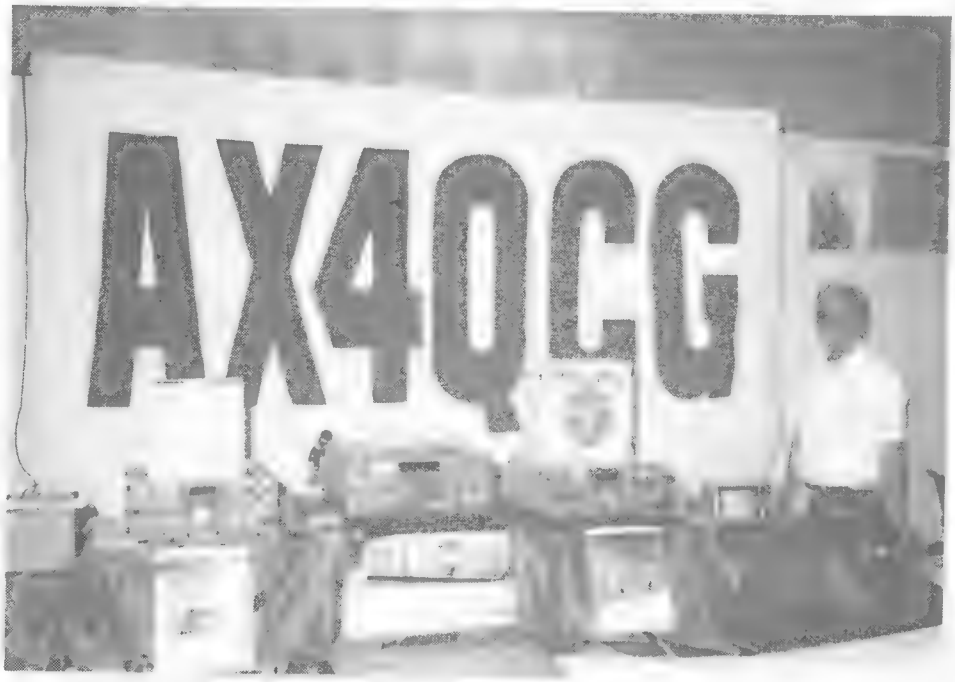
The Historical Display attracted a lot of interest.



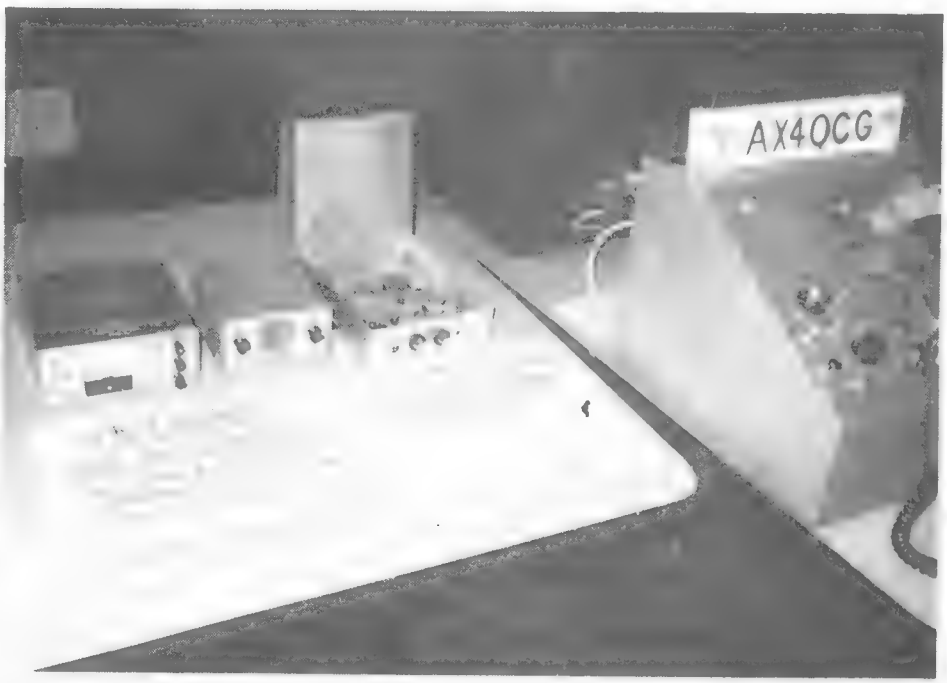
One of the stalls that got well picked over was the Brisbane Amateur Radio Club's Disposals Stall.

Not everyone knew the way to the Convention Centre, so VK4WIG, the Gold Coast Amateur Radio Society Club Station was on hand for directions.

Photos courtesy Bud VK4QY



The Games Station Banner displayed behind the Kenwood Trade Display.



Entries in the Home Brew Competition. On the right is the interface unit designed and built by Geoff Adcock, VK4AG for use at the Commonwealth Games Station.

Reg Dwyer VK1BR
FEDERAL CONTEST MANAGER
P.O. Box 236 Jamison ACT 2614

CONTEST CALENDAR FOR JANUARY 1983

9 End of Ross Hull VHF
8-9 73' 40 and 80 metre Test
15 World Communication Year contest
15-16 73' 160 metre Phone
29-30 White Rose SWL Test
29-30 French CW Test (not official)
28-30 CQ WW 160 metre CW

FEBRUARY

5-6 French 40 metre Phone (not official)
12-13 John Moyle National Field Day (Contest Champ)
12-13 NZART National Field Day
12-13 QCWA CW QSO Party
12-13 Dutch PACC Test
12-13 YL/OM Phone Test
19-20 ARRL CW DX Test
19-20 YL ISSB Phone Party
26 73' RTTY Test
25-27 CQ WW 160 metre Phone
26-27 YL/OM CW Test
26-27 RSGB 7 MHz Phone (not official)

MARCH

5-6 ARRL DX Phone Test
12-13 QCWA Phone QSO Party
12-13 YL ISSB CW QSO Party
26-27 CQ WW WPX SSB Test

CONTEST RULES FOR JOHN MOYLE, WHITE ROSE SWL, NZART FIELD DAY

JOHN MOYLE NATIONAL FIELD DAY CONTEST

CONTEST PERIOD From 0300 UTC 12 Feb 83 to 0500 UTC 13 Feb 83

OBJECT: To encourage portable operation on all bands by radio amateurs in VK and P2.

CALL AREAS Shall be defined as:-

(a) Within one's call area, VK2 to VK2, VK4 to VK4 etc.

(b) Outside one's call area, VK2 to VK4, VK6 to ZL etc.

RULES

1. In each division there are ten sections.
   (a) Portable field station, trasmitting phone, solo operator.
   (b) Portable field station, transmitting CW, solo operator.
   (c) Portable field station, transmitting open, solo operator.
   (d) Portable field station, transmitting phone, multi operator.
   (e) Portable field station, transmitting open, multi operator.
   (f) Portable field station, transmitting HF open, solo operator.
   (g) Portable field station, transmitting HF open, multi operator.
   (h) Portable field or mobile station, transmitting VHF.
   (i) "Home" transmitting stations.
   (j) Receiving portable and mobile stations.
2. In each division, 6 or 24 hours, the operating period must be continuous.
3. Contestants must operate within the terms of their licence.
4. A portable field station is defined as one which operates from a power supply which is independent of any permanent installation. The power source must be fully portable, ie batteries, solar panels, motor generators / alternators etc.
5. No radio apparatus, including masts, antennae, feeder cable etc., may be erected on the site more than twenty-four hours before the contestant begins operating.
6. All amateur bands may be used, but cross band operation is not permitted.
   Note: By gentlemen's agreement, we are refraining from using the 10 MHz band.
7. Cross mode contacts are permitted, and count single.
8. The size of any portable field station shall be restricted to approximately that of an 800 metre diameter circle.
9. Each multi-op transmitter should maintain a separate log for each band. An FM rig may be separate from an AM or SSB rig, but only one multi-op transmitter may operate on any one band at any one time.
10. All multi-operator logs should be submitted under one call-sign.
11. RS or RST reports should be followed by serial numbers beginning at 001 and increasing by one for each successive contact.
12. SCORING FOR PORTABLE FIELD STATIONS AND MOBILES.
    (a) Portable and mobile stations outside entrants call area — 15 points.
    Portable field stations and mobiles within entrants call area — 10 points.
    Home stations outside entrants call area — 5 points.
    Home stations within entrants call area — 2 points.
    (b) When a foreign portable station is worked, the contestants must determine whether or not the station worked is portable in the strict sense of the contest — see Rule 4.
13. SCORING FOR HOME STATIONS.
    Portable field stations and mobiles outside entrants call area — 15 points.
    Portable field stations and mobiles within entrants call area — 10 points.
    No points are scored for home stations working other home stations, whether in entrants call area or foreign.
14. Portable field stations may contact any other portable field station on ALL bands repeatedly, provided that at least four hours have elapsed since the previous contact with that station. Portable field stations may contact any home station only once on each band and mode. Note that AM, FM, SSB and any other voice modes are grouped together as PHONE.
15. Operation via active earth repeaters or translators is not acceptable for scoring. However, contacts via extra-terrestrial repeaters, eg satellites, EME is acceptable for scoring. Contestants should note Rule 6.
16. All logs shall be set out under the following headings:
    Call sign, band, emission mode, RST/serial sent, RST/serial received, date-time in UTC, points claimed. Contacts must be listed in chronological order.
    There must be a front cover sheet showing the following:
    Name, address, division, section, call sign, call signs of operators (for multi-op. entrants), location of station, equipment used, power supply used. Contestants in all sections shall also include a "zero-value contacts list", showing all contacts made that were of zero-value, ie contravened the rules. This list shall be set out under the same headings as for the contestants logs. Contestants must also certify that they have operated in accordance with the rules and spirit of the contest. It should be noted that the practice of multi-op. station participants considering themselves to be portable stations and making regular contacts with the portable field contest station so as to bolster that station's score is deemed to be not in the spirit of the contest, and as such contravenes Rule 16.
17. Certificates will be awarded to the winner of each section, in both the 6 and 24 hour divisions. The 6 hour certificates cannot be won by the 24 hour entrants.
18. Entrants in sections (a) through (h) inclusive must show how their power was derived, in accordance with Rule 16.
19. There is no bonus multiplier to be used in the case of CW-CW contacts. These count single.
20. Logs must be received no later than 23 March 1983 and sent to PO Box 236, Jamison ACT 2614.

RECEIVING SECTION

This section is open to all short wave listeners in VK and P2. Rules are the same as for transmitting stations, but do not have to show RST/serial of that station being worked by the portable or mobile field station. Logs must show the call sign of the portable or mobile station heard, the report and serial number sent by that station, and the call sign of the station called. Scoring is as shown in Rule 13. A station calling CQ does not count — only portable and mobile stations, which must be listed in the left-hand call sign column of your log, will count for scoring. Stations in the right-hand column (if available) may be any station contacted.

A certificate will be awarded to the highest scorer of each of the 6 hour and 24 hour divisions, individual or multi-operator entries.

The decisions of the FCM are final and no correspondence will be entered into.

WHITE ROSE RADIO SOCIETY 3rd SWL LF BANDS CONTEST

RULES

1. From 1200 UTC 29th January 1983 to 1200 UTC 30th January 1983 with contestants choosing their own period of eighteen consecutive hours.
2. The contest is open to anyone in the world and there will be two sections — phone and CW. No mixed mode entries.
3. The 1.8, 3.5 and 7 MHz bands are to be used.
4. The practice of logging a series of contacts made by one station is deprecated. Log entries must not include the same call sign in the *"Station Worked"* column more than ten times on each band.
5. The object of the contest is to log as many stations in as many countries as possible. Scores should be compiled as follows:-
   One point for each station heard on each band from one's *own* Continent and five points for each station heard on each band *outside* one's Continent. Total points to be multiplied by the number of different countries heard on each band *added* together.
   A list of countries heard must be furnished and a separate log must be submitted for each band.
6. The call areas of the USA, Canada, Australia and New Zealand will count as a separate country. ie W1, W2, W3, W4, W5, W6, W7, W8, W9, W0, VO1, VO2, VE1, VE2, VE3, VE4, VE5, VE6, VE7, VE8, VY1, VK1, VK2, VK3, VK4, VK5, VK6, VK7, VK8 and ZL1, ZL2, ZL3, ZL4. All other countries will be determined by the ARRL Countries list.
7. NO, CQ, QRZ or similar calls will be allowed to count for points. /AM or /MM stations are not to be included in the entries.
8. Log Sheets to show the following information:- Date, Time UTC, Band, Station Heard, Station being Worked, Report at SWL QTH. Points may only be claimed for stations actually heard and the call sign must be shown in full. If points are claimed for both stations, the call sign must appear in the "Station Heard" column.
9. Entries should be sent to the Contest Manager, Mr David McGregor G4 IDJ, c/o White Rose Radio Society, 8 Manor Court, Shadwell, Leeds LS17 8JE to arrive not later than 24th March 1983.
   Comments on the Contest will be appreciated and contestants are asked to give details of their receiving equipment and antennas.
10. Certificates of Merit will be awarded at the discretion of the White Rose Radio Society, and its decision will be final.
11. Contestants wishing to receive a copy of the results are asked to send a stamped self addressed envelope or two IRC's if outside the United Kingdom to the Contest Manager.

NZART FIELD DAY RULES.

DATE 1500 Sat Feb 12 to midnight the same day. 0600 Sun Feb 13 to 1500 the same day.

MODE Phone and CW, but no cross mode.

CONTACTS Once per mode per band per hour

FREQUENCIES 80 and 40 metres

MULTIPLIER A multiplier is earned when a Branch is worked on phone and another when the same Branch is worked on CW. This format is the same for each ZL Branch.

SCORING. ZL stations score 10 points for each overseas station, (VK) (I can only assume that each VK would score 10 points for each ZL station.)

TOTAL. Total score points times multipliers.

AWARDS: Apart from the impressive list of ZL trophies, a certificate for the top scorer in each VK call area will be awarded.

CYPHERS: Report and three figure number.

LOGS: Sent in date, time, band, station worked, cypher sent, cypher received and points claimed. Use quarto sheets. Emphasise new multipliers.

DATE DUE: Send all logs to ZL2GX prior to 21 March 1983.

SPECIAL NOTES FOR CONTESTANTS

During all contests, the activity can become quite frantic. In some cases the effort being put into the contesting can cause the manners and responsible attitudes of some amateurs, to be relegated to a very poor second place.

These selfish attitudes manifest themselves in ignorance to his/her fellow amateur, deliberate interference of the others' signal and a form of jamming.

Other forms of 'tactics' are pre-arranged schedules extending in some cases to the pre-preparation of the logs for submission and the practice of the members of multi-operator stations, while 'on duty', regularly travelling a short distance from the station and making regular contacts with their own stations.

All these activities may boost the score and the morale of the individual stations. However, the damage caused by these tactics to the great majority of responsible amateurs and, in particular to the low powered novices, is tremendous and far outweighs any benefit that can be gained.

The Wireless Institute of Australia is trying to encourage amateur activity on all the bands and promotes contest activity in an attempt to maintain the span and sizes of the current spectrum.

When contesting, please assist in keeping the activity of the contest in accordance with the amateur's code and help promote a very exciting form of recreation.

Thankfully these comments are directed to only a few of the amateur fraternity and I feel sure that the majority of the interference is purely co-incidental with contest activity.

Nano VK6UN

RESULTS OF THE 1981 RUSSIAN CQ M DX CONTEST "PEACE TO THE WORLD"

Congratulations to N. Boegheim, VK6UN, who won overall fourth place from all foreign amateurs with a score of 20,160 points.

Australian amateurs that were medal winners in the Oceania section of the Contest are as follows:

"A" 14 MHz

C. Maughan VK5TI.....Gold Medal

B. W. Thomas VK2FD.....Bronze Medal

"A" 28 MHz

N. Boegheim VK6UN.....Gold Medal

T. M. Darcy VK2DDD.....Silver Medal

"B" GR

S. R. Coleston VK4XA.....Gold Medal

"C" GR

B. A. Pitman VK4ATQ.....Gold Medal

Congratulations to all.

AR

EMC

(Electro Magnetic Compatibility)

If radio frequency interference is causing you a problem you are reminded that — "Advice on all types and aspects of interference (PLI, TVI, AFI, etc.) is available from the National EMC Advisory Service".

FORWARD DETAILS TO VK3QQ, Federal EMC Co-ordinator, QTHR.

A Call to all holders of a

NOVICE LICENCE

Now you have joined the ranks of Amateur Radio, why not extend your activities?

THE WIRELESS INSTITUTE OF AUSTRALIA (N.S.W. DIVISION)

conducts a Bridging Correspondence Course for the AOCP and LAOCP Examinations.

Throughout the Course, your papers are checked and commented upon to lead you to a SUCCESSFUL CONCLUSION.

For further details write to:

THE COURSE SUPERVISOR, W.I.A.

P.O. BOX 1066, PARRAMATTA, NSW 2150

W01108

VK2 MINI BULLETIN

Athol Tilley VK2BAD

PO Box 1066 PARRAMATTA, NSW, 2150.

DIVISIONAL OFFICE

The office of the WIA NSW Division is now located on the first floor, 109 Wigram Street, Parramatta. The office hours are between 11 am and 2 pm weekdays, and from 7 pm to 9 pm on Wednesday evenings. The phone number is 02-689 2417 and all correspondence should be sent to PO Box 1066, Parramatta, NSW, 2150.

Facilities include publication sales and information, QSL card drawers, and the members lounge/library area. Off-street parking is available for members visiting the new office.

GOSFORD FIELD DAY

All amateur radio operators, their families, friends and all interested in amateur radio are invited to attend the 26th Annual Field Day of the Central Coast Amateur Radio Club on Sunday, the 20th of February, 1983, at the Gosford Showground in Showground Road, Gosford.

EVENTS include an open scramble, pedestrian DF foxhunts, with junior events on 144.4-144.7 MHz and open events on 146.7 MHz, ladies and gents quizzes, children's events, outing to the Reptile Park, an afternoon bus trip and a Ladies Stall.

CATERING is as for last year. You can bring your own picnic lunch or purchase at the take away food bar. Tea and coffee available separately at no charge.

ACCOMMODATION is usually scarce and early booking is advisable.

TRAINS from Newcastle at 8.10 am and Sydney at 7.20 and 8.50 am will be met at Gosford with free transport to the Showgrounds.

WET OR DRY, the Field Day will proceed as there is plenty of shelter.

DISPOSALS items must be booked in before 9.30 am on the day. Catalogue forms and lot numbers must be obtained in advance from Bill Smith VK2TS at RMB 4525, Gosford, NSW, 2250. You can phone 043-74 1207 after hours for forms and lot numbers. A commission is charged on all sales. Please note that late arrivals or improperly tagged or catalogued items may be refused. Lot numbers and forms will be available at the Showground on Saturday afternoon, 19.2.83.

DISPLAYS: Companies, persons, groups, clubs etc wishing to set up a table or display at the Field Day should contact the CCARC at PO Box 238, Gosford, 2250 before 7.1.83.

Phone enquiries can be made to Ray Wells VK2BVO on 043-25 8614 between 7.30 am and 3.30 pm weekdays only.

VK2 QSL BUREAU will be in attendance. Bring your QSL card for the "CALLS PRESENT" board.

PROGRAMME DETAILS can be obtained by sending an SASE to the CCARC, PO Box 238, Gosford, NSW, 2250.

ANNUAL GENERAL MEETING

The Annual General Meeting of the WIA NSW Division will be held at 2 pm on Saturday, the 26th of March, 1983. Full notice and the agenda will be posted to all financial members in early March. Included will be the annual accounts, Auditor's report and annual reports of the division.

If you wish to nominate for election to Divisional Council, you may obtain a form from the office. Please note that only Ordinary ie full Members can nominate.

Items for inclusion on the agenda of the AGM must reach the Divisional Office no later than Wednesday, the 23rd of February, 1983. Note that no business can be discussed or voted on at the AGM unless all members receive notice of such business (see Article 31).

(sgd) Athol Tilley, VK2BAD, Secretary, WIA NSW Division.

7TH CONFERENCE OF CLUBS

A full report of the 7th Conference will be included in the February 1983 VK2 MINI BULLETIN.

COMPONENTS FOR SALE

The following components are for sale to members of the WIA NSW Division. Postage is given for small quantity individual item purchases. If you are making a multi item purchase, please include sufficient postage. We will return any excess as cash or components — please indicate preference. Send your order and payment to: WIA NSW DIVISION, Component offer, PO Box 1066, PARRAMATTA NSW, 2150.

Electrolytic capacitors, pigtail, mixed packs of values such as 22/250V, 1000/25, 1000/10, 100/63, 100/40, 220/10, 33/25. At least 15 items per pack. $1 per pack. Post $1.50 up to 5 packs.

Variable capacitors, 2 gang, broadcast band type. $0.50 each. Post $1.50 for 2, $2.50 up to 6.

4.7 uF 250V non polarised capacitors. $1 pack of 10. Post $1.50 up to 3 packs.

24 pin Molex IC sockets. $1 pack of 5. Post $1 up to 5 packs.

Octal valve sockets, solid mica. $1 pack of 10. Post $1.50 up to 3 packs.

1 pF (pack a) and 4.7pF (pack b) ceramic disc capacitors. $0.50 pack of 25. Post $1 up to 10 packs.

2.5uH RF Chokes. $1 pack of 25. Post $1 up to 3 packs.

AS322 transistors (sim to BC107). $1 pack of 20. Post $1 up to 5 packs.

Computer PC Boards, containing transistors, card sockets etc. $0.50 each. Post $1.50 for 2, $2.50 up to 8.

Relays all 5/10 amp contacts. Types include 3PDT-6V, DPDT-6V, DPDT-24V, 3PDT-24V, 3PDT-230V, DPDT-230V. They are open frame or sealed, some socket mount and others stud mount. Only $1 each. Post $1.50 up to 4, $2.50 up to 7.

This relay offer was made possible by the generosity of PROMARK at 6 Clarke St, Crows Nest. Being distributors of Toshiba Semiconductors and other items they should be remembered for large purchases.

DETAILS OF 4 CLUBS AFFILIATED WITH THE WIA NSW DIVISION

HORNSBY ADARC

PO Box 362, Hornsby, NSW, 2077.

Net: Mondays at 1930 EST on 28.370 MHz and repeater 7250 using VK2APF.

Meetings: 1st Wednesday of each month at the hall, cnr Sefton & Lockerbie Sts, Normanhurst.

President: Barry VK2AAB, V-Pres: Geoff VK2BQ, Secretary: Bill VK2EBM, others: Colin VK2PLV, Gerry VK2BMZ, Chris VK2YMW, Gareth VK2ANF.

Magazine: QUM, monthly. Editor: Gareth VK2ANF.

Repeater: VK2RNS channel 7250.

ILLAWARRA ARS

PO Box 1838, Wollongong, NSW, 2500.

Meetings: Second Monday of each month, Congregational Hall, cnr Coombe and Market Streets, Wollongong at 7.30 pm.

President: K. Curle VK2OB, V-Pres: D. McKay VK2DMR, Secretary: D. Meyers VK2PBP, others: G. Cuthbert VK2ZHU, E. Fien VK2YVF, G. Dowse VK2CAG, M. Keech VK2YXS, I Calcott VK2BXN, D. Henderson VK2VAV.

Classes: NAOCP & AOCP Friday nights at 7.30 pm at the Wollongong Technical College.

Magazine: The Propagator, monthly. Editor: K. Frost VK2DOI and L. Kleeborn VK2YJK.

WAGGA ARC

PO Box 294, WAGGA WAGGA, NSW 2650.

Net: Saturday at 1200H EST on 28.490 MHz and repeater 6750 using VK2WG or VK2NWG.

Meetings: Last Friday of month at Wagga Rescue Club at 8 pm.

President: Peter VK2DOL, V-Pres: Graeme VK2DJD, Secretary: Neil VK2KNR, others: Simon VK2PMM, John VK2PMT, Peter VK2DUS, Barry VK2VDU.

Magazine: QRM, monthly. Editor: Peter VK2DOL.

Repeater: VK2RWG channel 6750.

Field Day: Hosts SWARS Convention on alternate years.

WESTLAKES ARC

PO Box 1 Teralba NSW 2284.

Net: Tuesday at 2000H EST on 3.585 MHz and Sunday at 1130H EST on 3.585, 1.8125 and 147.1 MHz using VK2ATZ.

Meetings: Informal meetings at Westlakes ARC Clubrooms in York Street, Teralba on Saturdays.

President: K. Howard VK2AKX. Secretary: E. Brockbank VK2KEB, others: A. Efimov VK2DPY, M. Hall VK2DCW, G. Linthorne VK2GL, D. Pearson VK2AVO, P. Lorentzen VK2ATR, J. McLachlan, G. Taylor.

Classes: NAOCP on Tuesdays at 6.30 pm and AOCP on Wednesdays at 6.45 pm — both at clubrooms.

Magazine: WARC Monthly Newsletter, monthly except January. Editor: E. Brockbank VK2KEB.

Repeater: VK2RTZ channel 7100.

COMING EVENTS

John Moyle NFD contest: 12/13 February.

Gosford Field Day: Sunday 20th February at Gosford Showground.

Nominations for election to Divisional Council and agenda items for AGM close: 23rd February.

Annual General Meeting, WIA NSW Division: 26th March at 2 pm.

NSW members and clubs are invited to submit news items for inclusion in these notes to: WIA NSW Division, PO Box 1066, Parramatta, NSW, 2150. Items for February AR must reach us by the 3rd of January and for March AR by the 22nd of January, 1983.

Athol VK2BAD.

AR.

The WIA is in business for more members. Please help.

FORWARD BIAS

VK1 DIVISION

Fred Robertson — Mudie VK1MM

PO Box 46, Canberra, 2600

As advised last month, the Annual General Meeting of the VK1 Division will be held on 28 February 1982 in the Griffin Centre Studio at 8pm. Remember, it is in your interests to attend and participate.

The topic at the October meeting of the division was amateur television, and was most ably presented by Ron Harrison VK3AHJ and Ian Davis VK3ATY. The expert way they demonstrated and explained this mode made it look remarkably simple. The resultant interest generated surprised even a hardened cynic like myself.

As a result of this demonstration, an ATV group has been formed in VK1 and they hope to have about ten simplex ATV stations on air within a few months. They have also decided to construct an ATV repeater, with an input on 426.25MHz, to be located on Black Hill alongside the Channel 6, 2 metre repeater. The group will seek sub-committee status within the VK1 Division, and will approach the division for assistance in constructing the repeater.

Dennis VK1DG is the convenor of the ATV group, and Reg VK1BR has been appointed Procurement Officer to handle bulk purchasing, enquiries about availability of parts and the like. The group will hold an ATV net on Channel 6, VK1RAC, every Sunday night after the VK1 broadcast. So if you are interested in ATV, contact Dennis, or check into the net on Sunday nights.

One of the increasing problems to amateurs in the Belconnen area of Canberra is our local intruder. This is none other than the Naval Station. It was hoped that with the development of Canberra, the Naval Station would be relocated, if for no other reason than the fact that it occupies a choice piece of real estate which must be worth much more than the equipment in the station. Alas, this has not happened, and indications are that it will be with us for at least another ten years.

The problem with the Naval Station is not so much the amount of power they put out, but rather the fact that most of their equipment is getting on for thirty years old. This, combined with poor maintenance, results in the generation of unbelievable amounts of 'crud'. Their CW can be heard on 80, 40, 20 and 10 metres, their R7B buzz saw transmissions on 40, 20 and 10 metres, and their RTTY on 20 and 10 metres. The Melbourne meteorological broadcast is RST 579 on 14.119MHz, and they generate a strength 9 + 20dB carrier on 14.1995. Most of their transmissions generate spurii 200kHz either side of the fundamental.

If you are one of the unfortunates in the Belconnen area, make a note of every instance you hear the Naval Station in our bands and pass it to me. If our complaints to the local Radio Inspector don't do any good, we will bend the ears of a few politicians. For our soon to be $18 per year, we deserve some protection from the Navy museum of broad-band junk.

73
Fred VK1MM
Editor pro tem

AR

FIVE-EIGHTH WAVE

Jennifer Warrington VK5ANW

59 Albert Street, Clarence Gardens SA 5039

A very happy New Year to one and all. I hope that you all survived the Christmas Season, and are optimistically looking forward to the year ahead. As you will all be aware by now this is World Communications Year, or WCY-83, but not only will we, who have some connection with the field, be made aware of it, but the general public will also be aware. A co-ordinator has been appointed by the Government under the aegis of the Department of Communications, and with so much 'AWARENESS' going on, it would be foolish of us not to 'jump on the Band Wagon'. We can all do something towards public relations, but if you are in doubt as to whether you are on the right track, check with your PR person, or one of the Council. In VK5 our PR person is John Badcock VK5ZAP, and he would be pleased to hear of any ideas you may have.

One Saturday morning, back in October, we were in bed listening to the Broadcast bands, and my OM tuned in to 5CL to a programme called 'Practicalities'. It was an interview with Susan Brown VK2BSB, the President of the VK2 Division, and she did an excellent PR job for amateur radio, even to giving the WIA box number for more information. It occurred to me to wonder just how many people would have heard that, at 8.45 am on the ABC's less popular channel, but as I believe it may have national coverage, I hope that there may have been a few 'handfuls'.

One thing we associate with the New Year is the making of New Year Resolutions. Well this year you won't have to rack your brains trying to think of one, I've taken the liberty of doing it for you! We are supposed to be in the business of communicating, and yet more problems and misunderstandings arise, because we fail to communicate through the right channels. Don't moan to your friends, or on the air; tell a Councillor or Divisional officer, or put it in writing to the council in general After all, that's what you put us there for. So let's all make a new year resolution to be better communicators. And don't forget that it is time to get your suggestions for Federal Convention Items to your council, it may seem a long way ahead, but we need that much lead time to get things organised.

The first meeting for the year will be on Tuesday 25th Jan. at 8.00 pm.

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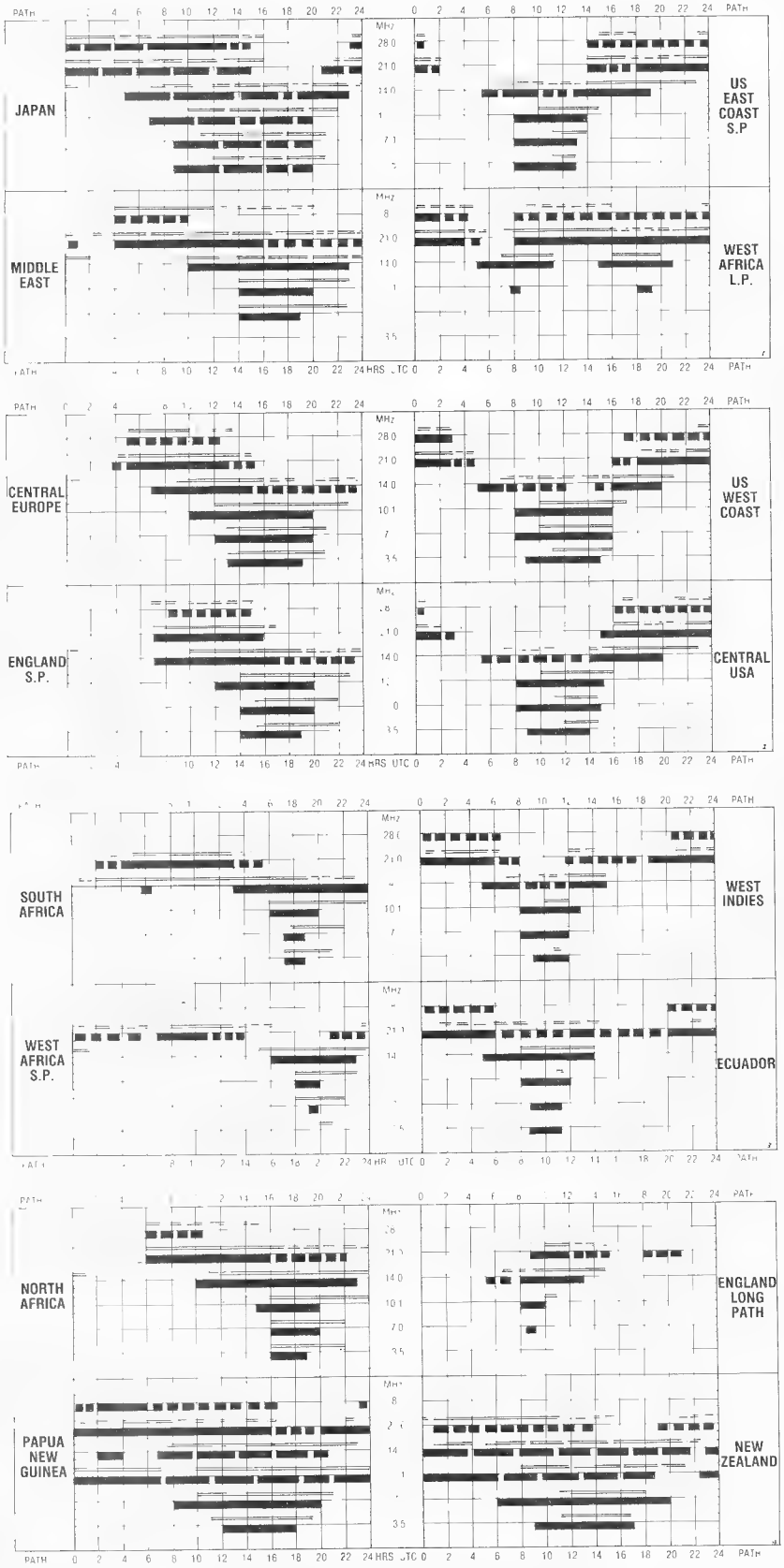
Len Poynter
VK3BYE



Due to early printing deadlines these predictions are reprinted from the Dec '82 issue.

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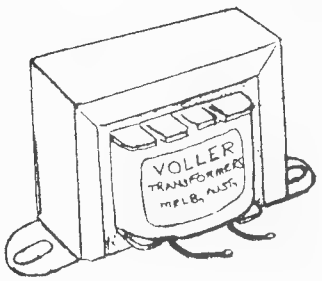

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LETTERS TO THE EDITOR

Any opinion expressed under this heading is the individual opinion of the writer and does not necessarily coincide with that of the publisher.

P.O. Box 22,
Yeoval, 2868
7th November, 1982

Dear Sir,

It was with great interest that I read the article about Nara (9M2LN) in November AR. I became one of Nara's "pupils" in February 1980, when my CW was a very shaky five wpm. With his expert instruction, not only in receiving, but in sending CW, I was able to pass the 10 wpm CW in August of that year. He was always most kind, patient and encouraging, and unfailingly devoted hours of his time and effort to assisting myself and many others to pass their NAOCP and AOCP CW exams, although not always in good health himself.

He has always been most willing to assist with any theory question, aerial test,etc, and nothing has ever been too much trouble for him.

As I was only using a CB set converted to 10 metres it was impossible for me to listen to the WIA broadcasts on 80 metres, and my practices with Nara were therefore the only ones that I had.

I would just like to say a very big "Thank You" to Nara, and also more recently to Hock, without whose help I am sure I would never have obtained my "full call", and wish them both many more years of "Charley Willy" operation.

Yours faithfully,

JOY COLLIS VK2EBX

3/157 Brook Street, Coogee 2034

"WORLD COMMUNICATIONS YEAR"

The Editor,

Dear Sir,

Here is a golden opportunity for all amateurs to become involved in activities and provide much needed publicity of our technical expertise, capabilities and remove the label of "a bunch of weirdo's" that many members of the public feel when amateurs are mentioned.

We have such diverse activities that I'm sure would astound non amateurs such as DX'ing, computer logging, VHF repeaters, RTTY, satellite, moon-bounce, television, microwaves and many more. I expect the museum of Applied Arts and Sciences will be involved not forgetting due to a dedicated group of volunteers, they perform this much needed publicity all year round.

So why don't the clubs get in on the act and set up stations in shopping plazas, static displays in bank windows and release news value items such as distress and third party traffic to the news media.

Items such as the launching of our satellites (and failure during launch!) should be of interest, but at least we can try and let people know what we are doing. Perhaps the Melbourne ATV Group could set up a receive station in a public place so shoppers / passersby can see what's happening on the ATV repeater, they have a tremendous achievement to be proud of so why not tell everyone about it.

Personally, I will gladly volunteer for any activities and would hope many others would do the same, let's really make an effort for WCY.

R N SINCLAIR VK2DWF

Obituaries

IRVING (BILL) PERRY

It is with deep regret to advise the passing of a very good friend and workmate — Irving Perry (Bill) VK3BAV of Sandringham on the 6th November, 1982.

Bill served with the RAAF as a Flight Radio Instructor until 1945 when he joined the Department of Civil Aviation in ground/air communications in Melbourne and subsequently in Mackay, Queensland (his home state).

In 1949, Bill and his family moved back to Melbourne where he took up a position with the State Electricity Commission in the Radio Laboratory in Richmond. He later transferred to the Educational and Training Branch of the SEC.

It was during this latter period that he established his amateur radio station with the desire to meet the amateur radio fraternity and to re-establish his practical interest in radio as a hobby, which he enthusiastically enjoyed after his early retirement in 1975 due to ill health.

Bill maintained his keen interest in radio until only recently when complications got the better of him. He made many new friends who will remember him for his cheery disposition and subtle remarks.

Our sincere sympathy goes to his wife Dorothy and his family. Bill will also be sadly missed by his close friends VK3s — NV, ARK, AZC, VQ, AMC and CF.

Harold VK4AKU

AR.

HARRY KINZBRUNNER VK4HK

Harry passed away in hospital at Atherton, North Queensland on Sunday 24th October 1982, failing to survive the aftermath of an attack of flu received some months ago. We extend Condolences to his widow.

Refer Thumbnail Sketch in December issue

VK4PJ

AR

THE REV. ROBERT GUTHBERLET

Bob had a wide experience as a promoter of amateur radio and youth clubs dating back to his boyhood days in London as part of scouting and similar activities. He moved to Australia in the mid 20's.

In 1943 he was appointed to a church in South Broken Hill, where he inaugurated the Open Door Boys and Girls Club, bringing with it the activities of VK2AOD. Five years later he arrived in Port Pirie where he had charge of the Central Mission and continued his interest by establishing the first club in that city, transferring the club call sign to VK5OD.

When the Youth Radio Club Scheme (YRCS) was adopted Federally by the WIA in 1962 there were a number of youth radio clubs existing in each state. In 1964 Bob had established the Open Door radio club at the Methodist Church at Mount Barker and later at Christies Beach.

That year (1964) he was appointed the WIA State Co-ordinator of youth radio clubs in South Australia and was instrumental in preparing a state constitution and publicity brochure.

Over the next decade, with Bob at the helm, there began an upsurge of youth radio club activity in which annual meetings of club leaders became a regular feature and did much to promote the scheme. Many club members were channelled into useful careers in electronics and allied fields. Many became radio amateurs. Inter-club visits and on air contacts were encouraged.

Bob was appointed Federal Co-ordinator of the scheme in 1972. During his term of office he showed unquestioned loyalty to the WIA and was actively involved in the three YRCS State Supervisors Conferences that brought club programmes and courses to a uniform standard throughout Australia.

Bob did not disclose the details of his radio background but one sensed that it was founded in the days of spark. He had been enthusiastically involved in promoting and administrating the activities of the club station VK5OD and as a result of visits overseas he was well informed with regard to developments of novice licensing in other countries prior to its introduction in Australia.

One thing stands out — he was well versed in the art of communication, particularly in encouraging others to communicate. He was also adept at getting things done. As a person he was down to earth, approachable, energetic and an enthusiastic supporter of youth. He did not think of himself as "a parson" in the popular usage of the word.

With the advent of novice licensing, the CB boom and his impending retirement, Bob withdrew from active participation in the radio scene by transferring the club call sign to his son John. Nevertheless, he retained an association with amateur radio and was occassionally seen at WIA functions.

There is no doubt that he displayed a remarkable sense of commitment.

Bob died in his sleep on 1st November, '82, aged 76.

To son John and other members of the family we extend our sincere sympathy.

Allen Dunn VK5FD
John Allan VK5UL

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PLEASE NOTE: If you are advertising items FOR SALE and WANTED, please write on separate sheets, including ALL details, e.g. Name, Address, on both. Please write copy for your Hamad as clearly as possible, preferably typed.

- Eight lines free to all WIA members
  $9 per 10 words minimum for non-members
- Copy in typescript please or in block letters to P.O. Box 150, Toorak, Vic. 3142
- Repeats may be charged at full rates
- Closing date. 1st day of the month preceding publication. Cancellations received after about 12th of the month cannot be processed
- QTHR means address is correct as set out in the WIA current Call Book

TRADE HAMADS

Conditions for commercial advertising are as follows: The rate is $15 for 4 lines, plus $2 per line (or part thereof) minimum charge $15 pre-payable. Copy is required by the first day of the month preceding publication.

Ordinary Hamads submitted from members who are deemed to be in the general electronics retail and wholesale distributive trades should be certified as referring only to private articles not being resold for merchandising purposes.

Amidon Ferromagnetic Cores: Large range for all receiver and transmitter applications. For data and price list send 105 x 220 SASE to: R. J. & U. S. Imports, Box 157, Mortdale, NSW 2223 (No enquiries at office. 11 Macken St, Oakley, 2223) BUSINESS CLOSED DURING FEBRUARY

CB Radios $69; walkie talkies, short wave radios, military, outback, business, amateur, marine, repairs, RTTY Siemens 100A printer $120, base mic., $45, ultrasonic alarm, $35, all ham bands on a single 6 ft whip, 1.8 to 30 MHz, for base or mobile, $300, aerials, installation, demonstrations, 40 ch. CB conversions, accessories, new rigs weekly. Bridge Disposals, 12 Old Town Plaza, opp. Bankstown Railway Station, NSW. Mail order service and all enquiries to 2 Griffith Avenue, Roseville 2069, or phone Sam VK2BVS, 7 p.m. to 9 p.m. only, on (02) 407 1066

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DIGITAL DISPLAY, DG 5 to suit TS-520S. VK2DVJ. Ph: (044) 76 7650

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EIMAC 8877 (3CX1500-A7) wanted. Don VK3DBB QTHR. Ph: (059) 41 1351 AH

WANTED — WA

DG-5 DIGITAL DISPLAY for TS-520S. Ph (09) 446 1568 or write VK6LL, 139 Woodside St, Double View WA 6018

FOR SALE — ACT

KENWOOD TS530S, as new, 27MHz fitted, $700 ONO. L10073 QTHR. Box 25 Cook 2614. Ph. (062) 51 2788.

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FT101B with matching VFO and speaker, $550; FT200 with FP200 power supply/speaker, $300, FRG7 receiver $200. All in excellent condition. VK2EE QTHR. Ph: (02) 587 2602.

KENWOOD TS820 with dig. display, DC converter, manuals and orig. carton $600 ONO. Kenwood TS120S with mobile bracket, manual and orig. carton. $500 ONO. David VK2KLX QTHR. Ph. (02) 476 1048

TOWER, 90ft free standing KVC Southern Cross Tower. Dismantled into 10ft sections for transportation. No rust. Hot dipped galvanised steel work. $1000. Ian Buchanan VK2DVJ 112 Ocean Pde, Dalmeny 2546 NSW. Ph. (044) 76 7650

FOR SALE — VIC

IC-22S, complete with mic, in original packing, little used, $200. Trio TS-820S ex estate, complete with mic, small usage, $580. VK3QZ. Ph: (051) 74 7707

ICOM IC202E, 2M SSB, 144-144.4 MHz plus Oscar crystal, VGC, $150. VK3ZMP. Ph: (03) 560 6995

KENWOOD TR2400 2m, 800 channel, handheld tcvr. Complete with charger, manual and soft carry case. Perfect order and condition. $240 ONO. Harry VK3ASI QTHR. Ph. (052) 43 1831

KENWOOD TS120S, late model, as new in carton, with mic, $465. Yaesu FT7, excellent order, extras, mic, $360. 13.8V 5A regulated PSU, $45. Fox Tango Club 9MHz, 2.1 kHz xtal filter for FT301, FT7, etc., new, $60. Daiwa CL67A 500W ATU, 1.8 to 30 MHz, $60. Kenwood R820 deluxe communications receiver, as new in carton, $495. VK3ARZ QTHR. Ph: (03) 584 9512

KENWOOD TS130V Tcvr, also remote VFO 120. Both units are in first class condition and come with all manuals and instructions, also original packing and 50K, N/C mike. Asking price $650 the lot, will consider any reasonable offers. Exchange also considered for Yaesu mobile. VK3PBZ QTHR. Ph: (052) 21 6763.

FOR SALE — QLD

KENWOOD TS520S HF Tcvr, EC, $450. Ben 2m lin. amp. 70W, EC, $100. Ben 6m lin. amp 80W, GC, $100; Leader LDM-815 dip meter, as new, $75; Katsumi mic compressor, A1, $20; 6m 5 el home brew fold-up Yagi, $30; 80m mobile ant with adj tuning spike, $20, 10 el of 2m beam. Only needs a boom, $20. Most in orig. cartons with manuals. Mike VK4KMD. Ph: (076) 35 6911.

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Insert to "Amateur Radio" - January 1983.

HEARD ISLAND DX ASSOCIATION Inc.

The Heard Island DX Association was formed in PNG in mid 1980 with the then sole aim: amateur radio activation of Heard Island. The recent bad luck with VK0RM and the realisation that even if everything had gone exactly right, only about 1000 QSO's could have been made. This was a fraction of what seemed required. Nevertheless, it was a significant event since Heard Island had been activated once more.

The early ideas of HIDXA seem very naive these days - much of it based on international amateur radio and the idea of most wanted Heard Island as a DXCC country. After a while it became apparent that the cost of such an expedition would run into a 6-figure amount. It therefore seemed reasonable that amateur and other help would have to be requested. A letter of intent went to all amateur radio societies, with the request that the aims of HIDXA be made known. Since money was involved, it stated that all 'donations' would be acknowledged by numbered receipts, with a money-back guarantee if the expedition did not take place.

In the meantime, approaches were made to the authorities in Canberra to start paving the road to obtaining permission to visit Heard Island. At that stage it appeared that Canberra was not set up for such a request, involving an expedition for solely amateur radio purposes. Numerous letters, telephone calls and a visit to Canberra resulted in the "Guidelines for Private Visits to Heard Island and MacDonald Islands" becoming the ground rules for any private visit to Heard Island. The authorities put a great deal of thought and hard work into the generation of these guidelines.

Using these Guidelines, a proposal for the expedition covering all aspects of the document was presented and resulted in Permission In Principle being granted. As a generous gesture on behalf of the authorities, additionally, permission was given to use existing facilities on Heard. It is emphasised most strongly that the courtesy and genuine assistance given to HIDXA was absolutely tremendous.

On reflection, the initial attempt for the 1981 season was impossible. An excellent vessel, excellent skipper, but a $2,400 a day charter really set us back on our heels. However, the main stumbling block, never to be resolved, was that the owner wanted all the money on the line before actual departure. This sort of cost dictated a limited stay on HI and 10 days seemed the minimum to produce 40,000 QSO's with a good team and reasonable propagation.

The 1982 season was a sad story of continual delaying tactics and non-committal responses from a fishing company based in W.A.. Our main interest in this company was a "magic" figure of $20,000 being given as a starting point for a 6-7 man lift to HI. In addition, since the vessel would not be idle, no charge would be made whilst we were on the island. The vessel was apparantly sound as it had been designated to carry out a fishing survey in the area off Heard Island. It, of course, seemed a dream chance, but that is what it exactly turned out to be. Even today we can still feel the frustration of the weekly "putting off session". The charge seemed reasonable, as it had always been, and still is, the intention of the expedition team to share the basic charter costs on an equal basis.

Negotiations were initiated for joining a possible expedition to HI with the "Dick Smith Explorer", and alternatively, a return to a charter of a fishing vessel for the usual X-thousand dollars a day.

At that stage there also was correspondence with the leader of the "Heard Island Expedition" (in those days "Heard Island Mountaineering and Photographic Expedition") in Sydney, about a possible joint-expedition. However, time was running short, and none of the available alternatives turned out feasible. So ends season 1982.

For the current season, the Mountaineering group and HIDXA went separate ways. The reason for this is simply that the groups had different aims and objectives, and had differing ideas about how to achieve them.

After establishing contact with SoJo (VK0SJ), he expressed an interest in joining forces with HIDXA. A visit to Norfolk Island early in April '82 by SoJo resulted in discussions and exchange of ideas. New plans for 1983 were generated and organisation was continued with renewed energy.

The key to Heard Island has always been suitable transport, and several months of frantic international research, which resulted in a list of about 10-15 alternative fishing or sailing vessels, the Cheynes II became the most viable proposition.

The ex-whale chaser has proven her capability on 37 whaling expeditions to the Antarctic waters for the Norwegian company "Thordahl" from 1947 to 1962. She later was operated from Albany,WA from 1962 until the Cheynes Beach Whaling Company was terminated in 1978. The Cheynes II was then released to the Maritime Museum of Tasmania, who didnot have sufficient resources to maintain the vessel. The present commercial owners since mid-1982 are refurbishing the Cheynes II to meet the survey requirements for a deepsea trawling and salvage vessel for international waters. However, the commercial fishing activity will only take off after the completion of the HIDXA charter. The master and licensed crew are very keen to undertake this expedition, and finally a favourable charter agreement could be negotiated.

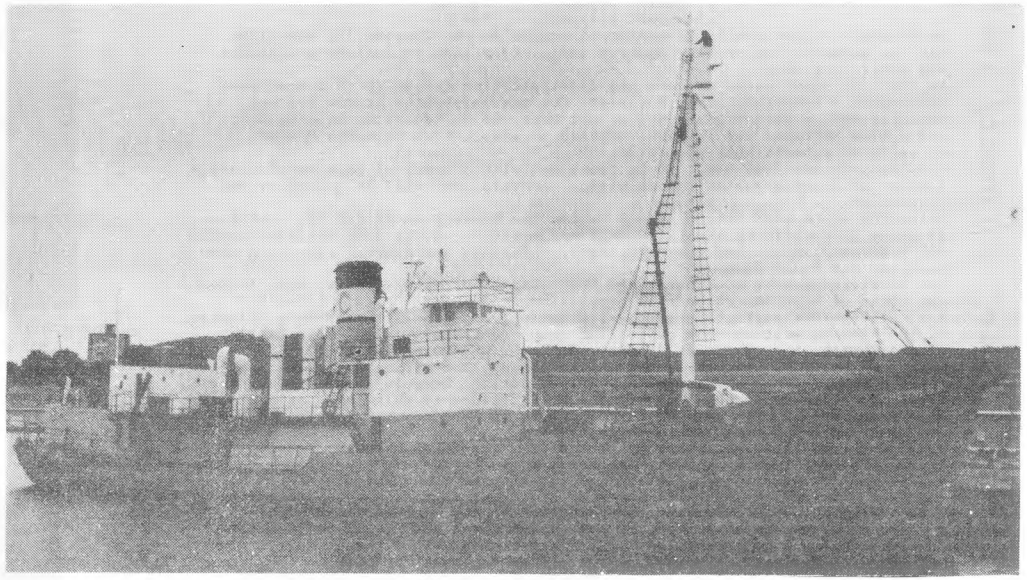
An assessment of Cheynes II and the crew made by an independent master-mariner/ surveyor cleared the way to sign the charter-contract on Sep. 4, 1982. On further application, final Government approval was given to land on HI.

HIDXA PO BOX 90 NORFOLK ISLAND SOUTH PACIFIC 2899

An assessment of the vessel and its crew made by an independent surveyor and master-mariner cleared the way for our chartercontract to be signed on the 4th of September 1982.

Steps were taken to protect members of HIDXA by incorporating the association as a non-profit organisation in Tasmania.

Final Government approval was then also given.



CHEYNES II in Hobart

TO: THE SECRETARY
HEARD ISLAND DX ASSOCIATION
P.O. BOX 90
NORFOLK ISLAND
AUSTRALIA 2899.

FROM. .....
.....
.....

- ☐ I would like to donate ..... to H.I.DX.A. to help to make the projected expedition a reality.
- ☐ I enclose an S.A.E. and IRC to cover return of my special receipt.
- ☐ I will be interested in the special Philatelic material which will be available soon after return from Heard Island.
- ☐ I request information on the 100 page definitive booklet on Heard and McDonald Islands available from H.I.DX.A.
- ☐ I request information on how I may become an Associated Member of H.I.DX.A.
- ☐ I feel I can help additionally .....

..... (Give details please.)

*H.I.DX.A. use. Donation ..... Acknowledged Donation no. .....
Further information sent as requested

Insert to "Amateur Radio" - January 1983.

STOP PRESS - HEARD ISLAND DX ASSOCIATION now INC., Hobart Nov. 1982.

The British-built vessel is 156 ft long, of 440 gross tonnage, powered by a 1876 SHP triple expansion steam-engine with two independent boilers using furnace oil, good for 15 knots cruising or 19 knots top speed. For fuel-economy reasons to HIDXA, only one boiler will be used at the time, cruising at 10 knots. The 29 bunks will accommodate the 18 expeditioners/deckhands and 5 licensed crewmembers with room to spare. The bridge will be equipped with interacting satellite and Omega navigators with plotter/printer, a 100 NM radar, a 1000 m colour display depthsounder, a FAX weathermaps receiver, two HF and one VHF transceivers, gyro and magnetic compasses, autopilot, etc etc. In order to avoid a headwind battle from Hobart to Heard, a southernmost route near the Antarctic continent will be chosen. The stay on HI will be about two weeks, depending on weather and propagation, and the great-circle route will be used straight back to Hobart, with only about half of its bunkered fuel consumed. The itinerary is:

Hobart Departure	Jan 2, 1983
Heard Arrival	Jan 18
Heard Departure	Jan 31
Hobart Arrival	Feb 10

As a result of the available number of berths on the Cheynes II, the HIDXA has now expanded the initial amateur radio objectives to include scientific and other interests.
At the time of writing, we have the firm participation of three scientists (Zoologist + Assistant and a Botanist) for the University of New England, Armidale NSW, a vetenary surgeon of the Dept. of Agriculture, Bendigo VIC, and a bird observer (of the ANU) working in association with Max Downes, an early HI expeditioner/biologist.
Negotiations are just about to be finalised with a group of four expeditioners (including a radio-amateur) from Vienna, Austria, who will be joined by one Australian.
Callsigns to be used are: -- VK0JS -- for the DX-work on HF SSB/CW, --VK0NL-- as a new YL-country by Kirsti (VK9NL) and --VK0SJ-- to be used maritime mobile for progress reports and for RTTY, SSTV, satellite and 6-meter operation both maritime and fixed on HI.
Two American amateur operators from the HZ1AB-club, Saudi-Arabia, have joined the ranks of keen DX-ers on this expedition.
Negotiations are still proceeding with newspaper journalists and/or a filmcrew.
At the time of writing, the expedition group consists of: Jim Smith, Kirsti Jenkins-Smith, Sjoerd (SoJo) Jongens, Prof. H. Heatwole, Dr. Jeremy Smith, Dominique Ward, Dr. Robert Jones, Claire Speedy, Bob Walsh, Walter Marshall, Bruno Klaussbruckner, Walter Floor, Werner Hoelzl, Leopold Krenn and P. Hardie.
HIDXA has left the announcement of the participants to this late, as a clause in the application procedure allowed members to withdraw or be declined before December 2nd, without great financial loss.
Besides the scientific program of the actual expedition members, we will also
- replace the Automatic Weather Station for the Bureau of Meteorology,
- make four-daily weather observations for the Metbureau enroute and on HI,
- repair (by SoJo, ex-ANARE Electronics Engineer) or retrieve the automatic weather station for the Glaciology Section of the Antarctic Division,
- perform exploratory trawls around HI, whereby the catch will be identified in a program in collaboration with marine-biologists of the Antarctic Divn,
- take air samples for the CSIRO, Dept. of Atmospheric Physics,
- keep an eye out for drift bottles onshore HI, released in a program for the Australian National University (ANU),
- check tags on the flippers of the Southern Elephant Seals for the University of Pretoria, RSA,
- etc, etc.

On Saturday, Nov 27, we had a gathering in Hobart, celebrating the first recorded sighting of Heard Island by the Britisch master Peter Kemp on the same date in 1833. Note that next year will be the 150th anniversary.
We organised an introduction to HI for anyone interested, with the following speakers:
- Dr. Fred Jacka, physisist with the 1947-48 ANARE expedition, setting up the ANARE station, and later Assistant Director (Science) of the Antarctic Division. Since 1965 Dr. Jacka is Director of the Mawson Institute for Antarctic Research, Adelaide. He opened with an introduction to the early years of ANARE and the rough voyage to HI,
- Alan Campbell-Drury (VK3CD), with the same expedition in 1947-48. His humorous account of the those times really caught the audience. He was the first ham-radio operator on HI as VK3ACD, and showed the original transceiver used being in excellent operational condition,
- Dr. Gavin Johnstone, biologist with the Antarctic Division and member of the 1980 Natmap Heard Island expedition. His series of colourful and explicit slides was a great introduction to what we could expect to find on arrival at HI.

Chairman of this meeting was Jim Smith (VK9NS) who stays in Hobart until departure to HI, finalising the seemingly never-ending amount of preparation for this expedition.
We hereby would like to thank all individual amateurs, clubs, companies and other institutions who provided us with over 500 donations and other support like loan of equipment.
A complete list of names of companies who support us will be issued at a more appropriate place and time when all negotiations are finalised.

HIDXA-committee: Jim VK9NS, Kirsti VK9NL, SoJo VK0SJ, Ron VK7RM, Graham VK7GD.

J.B. Smith (VK9NS) R. Barnett (Master)

Dr. F. Jacka Dr. G. Johnstone A. Campbell-Drury

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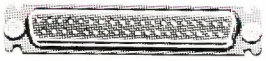

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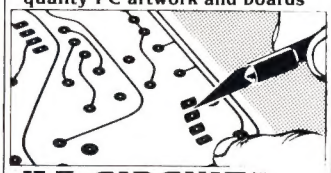

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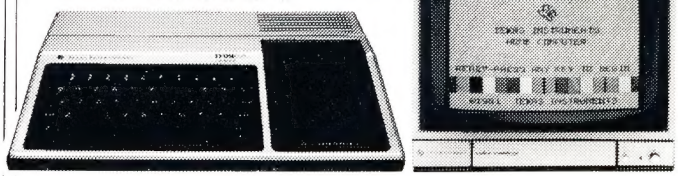

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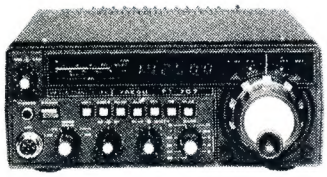

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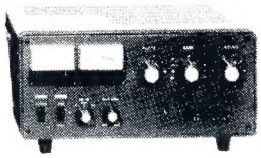

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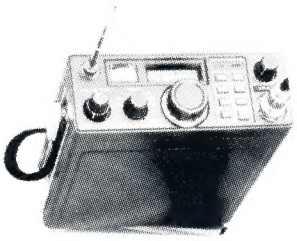

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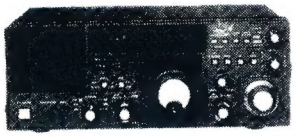

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